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ONE YEAR OF THE WAR.

THE month of August marks the first anniversary of the great European struggle for supremacy. The nations involved have sacrificed millions of lives, while billions of dollars have been spent in munitions of war. Countless arguments of justification have been advanced during the year. Treatises and documents have been issued to prove this or that contention, each of which claims fine points of merit, if not absolute infallibility. So enigmatical has the international controversy become, that discussions have well-nigh become passe, and most men dismiss the subject with a mental: "What's the use?"

The war's effect on business and industrial progress has become the real theme of the hour. Fortunately for America, the pessimistic aspects of this subject have been greatly dissipated since the advent of the conflict a year ago.

Many well-meaning men saw the upsetting of international credits, and they predicted dire financial disaster for our country. They couldn't understand how the war would stimulate trade or prove constructive in any way. As a logical result of these gloomy prophecies, investors hesitated to invest, buyers refrained from buying, and a reign of "psychological depression" held sway for a while. But the "blue devils" finally decamped, and captains of industry and financiers wiped the perspiration from their brows and realized that it was after all pretty largely imaginary.

Today, however, the United States is coming to the fore with an exceedingly favorable balance of exports over imports as indicated in the fiscal year ending June 30, 1915. According to reliable statistics, our trade balance will total the unprecedented figure of one billion one hundred million dollars. The United States is therefore rapidly being transformed from a debtor to a creditor nation, and it appears very likely that Uncle Sam will soon develop into the master merchant of world commerce. America's turn has come. We are waking up. In short we have become an international power, and we are now fitting ourselves for our new station. Heretofore London has been the world banker, but hereafter the American dollar is to fill a new place in the oversea commerce of civilization.

Last week a "market week" was held in Chicago. The city saw the spectacle of 10,000 or more "country buyers," flocking into town. Wholesale houses reported a record-breaking business, and stated that the number of out-of-town customers handled was more than three times normal. The consensus of opinion among these buyers, representing merchants and manufacturers, tended to confirm the prevalent opinion that the country is undergoing a period of prosperity that is permanent and not transient.

Bankers from all over the Middle West refer to their reports on conditions of business as evidence of the fact that money—savings—has accumulated in a surprising fashion in the past six months. Bankers assert that these savings will be the backbone of an immense buying power, as soon as the present feeling of conservatism is eliminated. Crop conditions are reported as ideal in spite of the heavy rainfalls, and from the Northwest come reports of bumper crops and boom conditions in general.

Concerning the return of prosperity and of the improved business situation, a well-known banker of Chicago and New York has this to say: "The improvements since last August may justly be called remarkable. When the comparison is made with conditions in other countries, we find renewed grounds for optimism, and a feeling of thankfulness that we are Americans."

Water Supply, Plumbing and Sewage Disposal for Country Homes*

By ROBERT W. TRULLINGER,
Rural Engineer, Office of Experiment Stations

Introduction.

IT is the purpose of this series of articles to treat in a simple manner that portion of the subject of farm home sanitation relating to pure water supplies, the safeguarding of the same against contamination and the safe disposal of sewage. A few suggestive drawings and illustrations are given to fit average cases, together with information intended to help modifying the designs in order to apply them to particular needs.

The greater part of this work is based on accepted scientific and sanitary principles, and many facts have been drawn from the works of authorities, to whom due acknowledgment is given.

The Farm Water Supply—Dangers from Contamination.

Without doubt many of the germ diseases may be transmitted by means of water; and some of the diseases are so uniformly transmitted by water that they are known as "water-borne" diseases. Typhoid, dysentery, and other intestinal disorders are such diseases, and if they may be carried by water it is of the greatest importance that every precaution be taken to insure a pure water supply.

Farm water supplies may be divided into three classes, which in the order of their liability to pollution are surface supplies, shallow underground supplies, and deep underground supplies. The surface supplies are obtained from streams, ponds, reservoirs, and cisterns; both shallow and deep underground supplies are obtained from dug, bored, driven, or drilled wells, and from springs.

That farm water supplies are very subject to pollution is evidenced by the investigations of various authorities. The investigations of K. F. Kellerman and H. A. Whitaker, of the United States Department of Agriculture, in co-operation with the Minnesota State Board of Health, indicate that of 79 carefully selected and typical water supplies in Minnesota 20 were good and 59 were polluted. Of the polluted wells 11 were so located that even extreme care would not make them safe; 10 were poorly located, but improvements in the protection from surface wash and infiltration would make them safe; 25 were bad only because of poor surface protection, and could easily be made safe. Practically all the surface supplies investigated were polluted. During these investigations 23 of the farms examined showed a record of typhoid fever.

F. T. Shutt, of the Canada Experimental Farms at Ottawa, reviewing his study of the subject since 1887, states that of the farm water supplies examined 30 per cent may be classified as safe and wholesome, 25 per cent as suspicious and probably contaminated, 36 per cent as seriously polluted, and 9 per cent as nonpotable through high salinity.

Contamination of Surface Supplies.

Surface water supplies are those most liable to pollution, and authorities agree that they are the most unsatisfactory for farm use. Streams and ponds receive the greater part of the surface wash from the immediate neighborhood, and in many cases barnyard or stockyard drainage from points remote from where the water is taken for household use. Streams or ponds located in pastures, manured fields, or where stock can gain access to them are polluted. Sometimes sewage and house drainage are emptied into streams and ponds. In fact, since they are open and unprotected, there are a thousand and one different sources of pollution for such supplies. Rain waters from the roof are polluted by dust, dirt and leaves, which collect in the eaves trough, and by the droppings from birds.

Surface water supplies should, therefore, not be used for household purposes, not even for washing milk cans or for laundry purposes, unless no other supply is available. And it may be safely assumed that the person who drinks water from surface supplies endangers his health if such supplies are not first protected from the sources of contamination as far as possible and then purified.

Cisterns.

In localities where underground waters are hard to obtain, cisterns may be used for the filtration, partial purification, and storage of rain water, and surface supplies. The size of the cistern will depend on the number of persons in the house and on the general water consumption, as discussed hereafter, under "Pumping, storage and distribution."

The cistern should be of water-tight construction, to prevent leakage and to prevent pollution from the neighboring soil. It should have an overflow drain and a tight cover. There should also be suitable provision for straining or filtering the water previous to its entrance to the cistern.

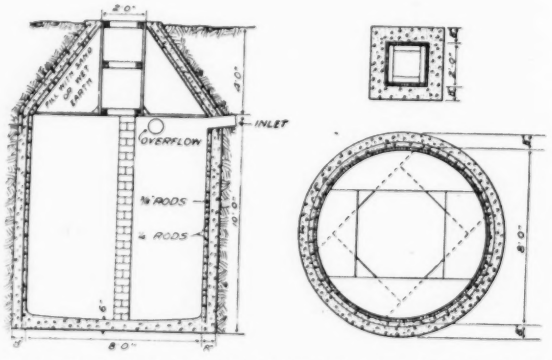


Fig. 1.—Reenforced Concrete Cistern, Showing Arrangement of Forms and Reenforcing.

The cistern should ordinarily be in two compartments, with a filter wall of porous brick between. One compartment serves then as a settling chamber and the water receives a final filtration before entering the storage compartment.

Concrete is probably the most sanitary and durable material for cisterns. In general, the walls and floor should be 6 or 8 inches thick and well reinforced, and the concrete should be carefully proportioned and mixed. A mixture of 1 part cement to 2 or 2½ parts of clean, sharp sand and 4 or 5 parts of clean and fairly small

*Prepared and published under the Direction of the U. S. Department of Agriculture, Washington, D. C.

crushed rock or gravel is satisfactory for fairly water-tight concrete. The inside surface should be coated with a 1 to 2 cement mortar. Fig. 1 shows a circular cistern of average size sufficient for a family of 6 or 8 people.

In constructing such a cistern, make a circular excavation 16 inches wider than the desired diameter of the cistern and about 16 inches deeper than the desired depth. Make a cylindrical form, as shown in the figure, the outside diameter of which will be the inside diameter of the cistern. Mix the concrete in small batches fairly wet, and tamp in between the form and the earth. To construct

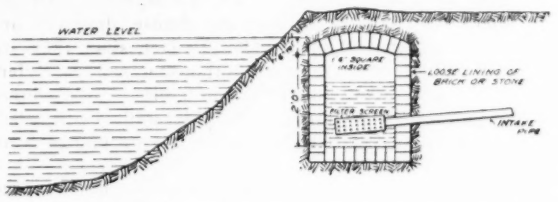


Fig. 2.—Crib of Brick or Stone for Intake from Pond.

the conical portion, build a floor across the top of the cylindrical form, leaving a hole of the desired size in the center. Brace the floor well with uprights from the cistern bottom. Build a cone-shaped mold of wet earth or sand, and lay the concrete and reinforcing on this cone. Allow it to set and harden well before removing the forms and earth. The following table gives an approximate bill of materials for two sizes of cisterns:

Cisterns—Material.

[Concrete; 1 part cement, 2½ parts sand, 5 parts gravel.]

Material.	14 feet deep (10-foot cylinder, 4-foot cone), 8 feet in diameter, capacity, 3,800 gals.	13½ feet deep (10-foot cylinder, 3½-foot cone), 6 feet in diameter, capacity, 2,100 gals.
Cement .....bags..	43	31
Sand .....cubic yards..	4½	3
Gravel .....cubic yards..	9	6½
Brick for filter wall	1,000	800
Lumber for forms..board feet..	225	200

The Office of Public Roads of this department has established a method of making concrete by intermixing mineral residuum oil, which, according to its tests, makes a damp-proof and fairly water-tight concrete.

If water is piped from a stream or pond subject to pollution, the pipe entrance should be placed in a crib and screened, as shown in Fig. 2. The pipe can then empty into a receiving filter, made of concrete, which contains fine sand, gravel, and powdered charcoal in layers (Fig. 3), and from which it empties into the cistern. The rain-water pipe from the eaves trough should be provided

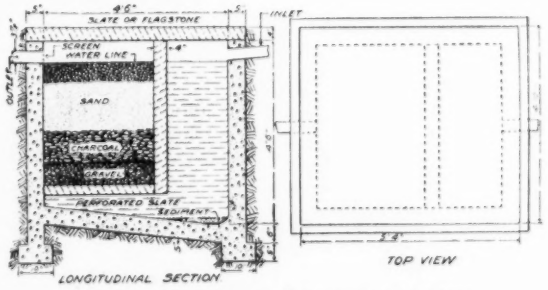


Fig. 3.—Cistern Filter of Concrete and Stone.

with a switch, or cut-off, so that the flow may be diverted to the outside—as, for instance, for a short time at the beginning of rains—to exclude the filth collected on the roof and gutters. An overflow pipe should be provided in the side of the cistern and should be screened to exclude rats and other vermin.

The above treatment will, in a large measure, purify surface water for household uses other than drinking or cooking; but if this water is to be used for drinking or cooking it should first be boiled.

Distilled Water.

Sometimes a simple still can be conveniently used on a kitchen range to provide distilled water for drinking purposes. Saline (alkali) waters are satisfactorily treated in this way. Fig. 4 illustrates a form of still which has been found effective and convenient for household use. It has the advantage of being inexpensive. The still consists essentially of a water boiler (*A*) on the range, having a capacity of about 1½ to 2 gallons, and a condenser suspended at the proper height from the ceiling. The pipe (*B*) conveys steam to the condensing chamber (*C*) and

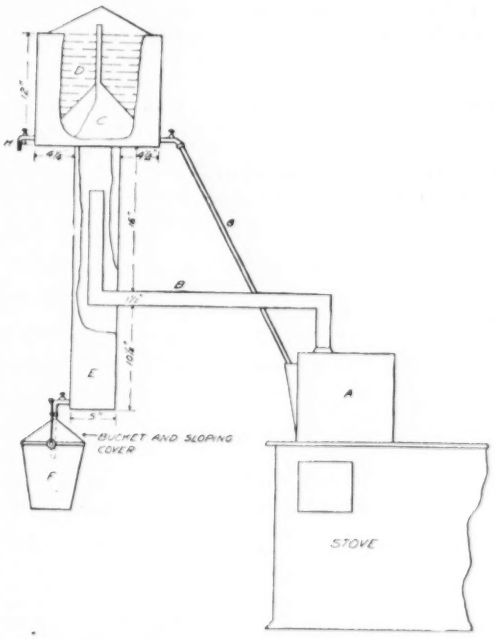


Fig. 4.—Water Still for Household Use.

is kept cool by water in the compartment (*D*). The distilled water collects in (*E*) and can be drawn off from time to time or allowed to run continuously into the bucket (*F*). The metal used in the construction of the still should be well-tinned copper and no solder should be exposed to the action of either the steam or the distilled water.

Contamination of Underground Water Supplies.

It is usual to distinguish between shallow underground supplies and deep underground supplies. Wells from 15 to 30 feet in depth to water flowing in a layer of gravel or sand, which rests on an impervious stratum, are considered as sources of shallow underground supply.

Both shallow and deep farm wells are often polluted from local sources. They are often located for convenience in the barnyard, under the barn or stable, close to stock pens, privy vaults, or leaching cesspools, or close to the back door, out of which household slops are thrown and near which animal and vegetable refuse is often allowed to accumulate and decompose. The soil surrounding the well becomes saturated with organic filth, and, unable finally to perform its useful work of filtration and purification, allows the surface water percolating through it to carry its load of contamination into the well.

The curbing or covering is often loosely constructed of boards, permitting small animals and vermin to fall into the well; and surface water carrying filth and manure, especially after rains, runs into the well from the top.

The well may be located at such a distance from sources of contamination that ordinary pumping will bring no bad results, but in case of unusually heavy pumping the underground water surface for a distance around the well

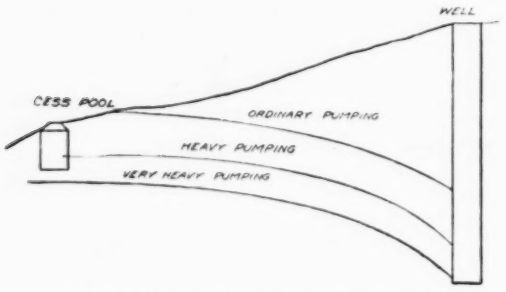


Fig. 5.—Effect of Pumping on Ground Water.

may be sufficiently lowered to reach the zone of contamination. This principle is illustrated in Fig. 5.

Deep bored or driven wells are less liable to pollution than shallow dug or bored wells, since in the first case the wells are usually imperviously cased and the surface water must filter through a depth of soil equal to the depth of the well before gaining access to it, while in the second case the wells are usually loosely lined with brick or stone, and the surface water, having only a short distance to filter, seeps in through the entire depth.

That both deep and shallow wells are subject to contamination is shown from many examinations which have been made. Of 177 deep and 411 shallow farm wells examined in Indiana, 116 of the deep well waters were of good quality, 45 were bad, and 16 were doubtful; 159 of the shallow well waters were good, 209 were very bad, and 43 were doubtful.

The safety of water supplies when near sources of possible surface pollution often depends largely on the character and quality of the material in which the well is sunk. Surface waters in sinking through sandy soils or surfaces are filtered, and in the finer sands much of the polluting matter which they carry is frequently removed. In coarser sands or gravel the degree of filtration is less, but water taken from sands and gravels at a considerable depth may be considered relatively safe. Waters from

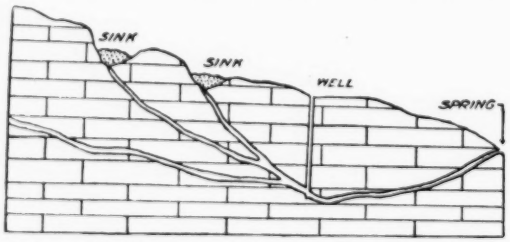


Fig. 6.—Pollution of Subsurface Water in Limestone.

wells in clay are not often polluted, since surface pollution filters through clay very slowly.

Waters from wells in limestone are frequently polluted, owing to the fact that limestone soils usually contain passages and channels at different depths, which sometimes form a continuous passage for underground water for a considerable distance, and which are very often directly connected with sinks and basins occurring here and there on the surface. It is a common practice to dump manure, trash, and garbage into such sinks or basins, and rain water falling into these plunges directly into the underground channels, carrying with it the impurities from the basin to those points where wells are sunk. In this manner garbage or refuse dumped anywhere in the neighborhood of or even at a considerable distance from a well in limestone may pollute the water. Fig. 6 shows how the pollution of wells and springs may occur in limestone.

Deep wells in granite or jointed rock are often polluted, although cased to a great depth, since polluted water may sink in a zigzag course along the rock joints until it reaches the bottom of the well casing. It is, therefore, necessary to exercise care in the location of the well and in the preliminary protection from pollution.

Well Location and Preliminary Protection.

The farm well, especially a shallow dug well, should be located somewhat above the barns, buildings, yards and stock pens, or at least in such a position that the surface drainage from all possible sources of animal and vegetable contamination is away from the well. The location should also be as far removed from these sources as convenience will permit.

To properly safeguard wells against outside contamination, first, all sources of contamination should be removed

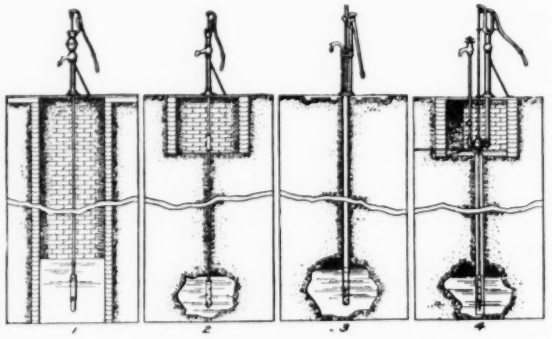


Fig. 7.—Types of Deep and Shallow Wells.

as far as possible. If local conditions and prices will permit, it is a good idea to provide impervious floors with water-tight drains for farm buildings and stock pens. Under the same conditions concrete manure pits might well be provided to not only prevent the liquid manure from polluting the neighboring soil, but to save the manure. No garbage, manure, or rubbish should be dumped into sinks or basins in the immediate neighborhood, and these should be fenced off and kept free from polluting matter. The house should be provided with some safe method of sewage disposal, while slops and garbage from the kitchen should be deposited in tightly covered garbage cans and disposed of by burying in the fields, burning, or feeding to pigs. The use of privy vaults and leaching or overflowing cesspools should be absolutely avoided, since they are likely to be sources of the worst contamination. Second, the farmer should become acquainted with the various types of wells and the best methods of protection, and the well should be so protected as to exclude filth from those sources of contamination which it has been impossible to remove or have been overlooked.

Types of Wells and Methods of Sinking.

In the selection, location and sinking of a well it is always a good idea to consider permanence in addition to safety. This will depend on the kind of well used, and one should be acquainted with well types and methods of

sinking. The well should penetrate to levels below that of the ground-water surface in the driest seasons.

Fig. 7 illustrates four different common types of deep and shallow wells. No. 1 shows a dug well, with pump, which may be lined with either concrete or cemented brick. No. 2 shows a driven well, which is constructed by attaching a point on the end of the pipe and driving the pipe into the ground until water is reached. The point is provided with a short length of pipe with perforations, which permit the water to enter the pipe and keeps out the sand and gravel. This arrangement is best suited to shallow wells, as the cylinder is near the surface in a dry well. If the depth to water is greater than the suction limit, it is necessary to dig a dry well deep enough to place the cylinder within the suction limit. Nos. 3 and 4 are drilled wells, consisting of a small hole, which may be from 3 inches to 15 inches in diameter. This hole is lined with an impervious iron casing, which prevents caving in and keeps out all water, except that which enters at the bottom. This type of well can pass through as many water-bearing beds as desired, and none but that from the lowest will enter. The casing is large enough to allow the cylinder to be placed below the water surface, or as near the water as is necessary. No. 4 shows a drilled well with a dry well installed above it to accommodate the lower half of a pump made for underground discharge.

M. L. Fuller* states in regard to types of shallow wells and conditons to which they are adapted: "Dug wells are generally circular excavations 3 to 6 feet in diameter. They are adapted to localities where the water is near the surface, especially where it occurs in small seeps in clayey materials, and requires extensive storage space for its conservation. Bored wells are wells bored with various types of augers, from 2 inches to 3 feet in diameter, rotated or lifted by hand or horsepower. They are usually lined with cement or tile sections with cemented joints, and often with iron tubing. They are adapted to localities where the water is at slight or medium depths, and to materials similar to those in which open wells are sunk. Punched wells are small holes usually less than 6 inches in diameter, sunk by hand or horsepower, by dropping a steel cylinder slit at the side so as to haul and lift material by its spring. They are adapted to clayey material in which water occurs as seeps within 50 feet of the surface, but not at much greater depths. These wells should also be lined with tile, iron tubing, or sheet iron casing. Driven wells are sunk by driving downward, by hand or horsepower apparatus, small iron tubes, usually 1¼ to 4 inches in diameter, and provided with point and screen. They are adapted to soft and fine materials, especially to sand and similar porous materials, carrying considerable water at relatively slight depths, and are particularly desirable where the upper soil is likely to be polluted."

Since most well-water supplies are obtained from sand and fine gravels, the cheapest and best method of well sinking is by driving. In a driven well the water can only be polluted at the depth of the strainer. In some materials, such as clay, it is necessary to bore the well, in which case it is absolutely necessary for safety that the well be lined with impervious casing to the strainer. Deep and shallow dug wells should also be lined.

Protective Well Linings.

For lining shallow dug wells the latest practice has been the use of reinforced concrete. This has also been successfully practiced in lining deep dug wells. Concrete may be made practically impervious to water, so that a concrete-lined shallow or deep dug well can only be polluted from the bottom.

Fig. 8 suggests a method of lining dug wells with concrete, recommended by F. N. Taylor in his book on "Small Water Supplies." Dug wells are usually about 6 feet in diameter. The concrete need be only about 6 inches thick with vertical steel reinforcing of ⅜-inch rods spaced 18 inches apart, and circular reinforcing of ¼-inch steel rods spaced about 9 inches. Two sets should be bound together by steel wire with the circular reinforcing placed inside the vertical. A carefully proportioned concrete mixture of 1 part cement and 2 parts sand to 4 parts of gravel or crushed rock should be used. A circular collapsible form is necessary, with diameter 12 inches less than the diameter of the well and about 5 feet long. The two rings, *A* and *B*, are cut to a diameter equal to that of the shaft, less twice the thickness of the concrete and 4 inches for the 2-inch lining boards. The rings are made by drawing a circle the size of the frame and laying boards around its circumference, as shown by the figure. The boards are then lightly tacked together and a circle of the same radius marked on three ends. Finally, around the circumference of the ring are fastened boards, each 2 inches thick, and of the required length of the form. The concrete lining rests on the bottom of the well, which has been previously leveled to receive it. A wet mixture is advisable for this class of work. The form should be left in until the concrete has properly set before it is raised to construct the next section.

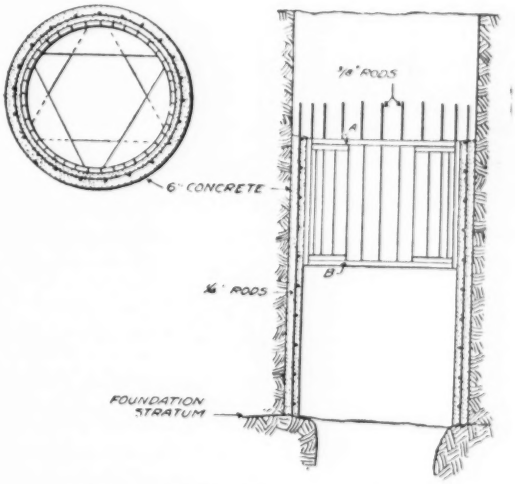


Fig. 8.—Concrete Well Lining, Showing Arrangement of Forms.

(To be continued)

*M. L. Fuller. Domestic Water Supplies for the Farm. New York and London, 1912, p. 68.

George Curtis, of the firm of B. Curtis & Sons, Cape May, N. J., has taken over this business and reports having secured contracts for plumbing in two bungalows.

E. W. David, Cape May, N. J., has secured the contract to install plumbing in N. Z. Graves' stock farm, near that city.

The Hammond Heating Co. has been organized with a capital stock of $10,000 in Cincinnati to engage in a heating and ventilating business. L. W. Hamond, L. M. Hammond, H. M. Dalton and E. A. Winter are the incorporators. L. W. Hammond has for some time been president and treasurer of the Peck-Hammond Co., of Cincinnati.

Proportioning Pipes

By THOMAS TAIT

Thomas Tait.

IN comparing pipe sizes, it is quite common to make the statement "doubling the size of a pipe increases its capacity four times," and assume it to be correct. Let us see how this may be expected to work out in actual practice. As the internal diameters of standard sizes of steam and water pipe are all a trifle larger than the rated sizes, we will deal with the rated sizes in the calculations. The area of a 1-inch pipe is .7854 square inches. Now, doubling the size of the 1-inch pipe gives us a 2-inch pipe, and the area of a 2-inch pipe is 3.1416 square inches. .7854 will go into 3.1416 exactly four times, and this goes to show the truth of the commonly used statement, *as regards the square inches of area*. Matter passing through a pipe does not have the same rate of travel in all portions of the pipe, being *faster* in the center and *slower* at the outer edge or periphery. This is explained by the fact that friction plays an important part in the passage of matter through any piping system. As the largest frictional areas presented are the inner surfaces of the piping and the outer surface of the matter passing through the piping, it naturally follows that the slowest rate of travel will be at this point. As we proceed toward the center of the pipe, knowing that the travel of matter in any pipe is accomplished by a portion of the matter "slipping" or "sliding" over other portions, we can readily see that the area of frictional surface will become *smaller* and thus allow for a *faster* rate of travel near the center of the pipe. Let us now compare the internal circumference of a 1-inch and a 2-inch pipe, and see how they compare as regards surface presented for frictional effect. The circumference of a 1-inch pipe is 3.1416 inches, and of a 2-inch pipe, 6.2832 inches. Let us assume we have a pipe 10 inches long and see the square inch area presented as frictional surface in the 1-inch and 2-inch pipes. $6.2832 \times 10 = 62.832$ square inches in the 2-inch pipe. $3.1416 \times 10 = 31.416$ square inches in one 1-inch pipe. $31.416 \times 2 = 62.832$ square inches, or the same frictional surface in two 1-inch pipes as presented by one 2-inch pipe. As the *areas* show that the 2-inch pipe will carry four 1-inch pipes, let us see the frictional surface presented in the four 1-inch pipes, each 10-inches long, and we find this will be $31.416 \times 4 = 125.664$ square inches, or *twice* as much as presented by the 2-inch pipe.

As frictional resistance is an important factor in the quantity of matter that can be passed through any pipe, a comparison of the frictional surfaces presented by one piece of 2-inch pipe 10 inches long, and four pieces of 1-inch pipe 10 inches long, would lead one to believe that, disregarding the fact that the relative *areas* show that one 2-inch pipe is equal in area to four 1-inch pipes, the 2-inch pipe should carry *more* than four 1-inch pipes, or in other words, deliver *more* matter than four 1-inch pipes, in a given time. With this thought in mind, the writer made a series of experiments, using the same length of pipe and number of fittings, with 1-inch and 2-inch pipe, and the results showed that approximately 5.9 1-inch pipes were required to deliver the same amount of water as one 2-inch pipe, during the same period of time. For all practical purposes this can be safely taken as six times, and the statement "doubling the capacity of pipe increases its capacity four times" will be more correct if it reads "doubling the size of pipe increases its capacity four times plus 50 per cent.

The following table is used in the office of the supervising architect, and the writer has made some additions to same.

Equalizing Table.

½-inch equals	2	4-inch equals	380
¾-inch equals	5	5-inch equals	650
1 -inch equals	10	6-inch equals	1,050
1¼-inch equals	20	7-inch equals	1,600
1½-inch equals	30	8-inch equals	2,250
2 -inch equals	60	9-inch equals	3,090
2½-inch equals	110	10-inch equals	3,900
3 -inch equals	175	12-inch equals	6,300
3½-inch equals	260	14-inch equals	9,600

To illustrate the use of the table, suppose we wish to find the size pipe to supply four 1¼-inch pipes, three 2-inch pipes, one 3-inch pipe, one 4-inch pipe and one 6-inch pipe. From the table we see that one 1¼-inch pipe = 20, then, $4 \times 20 = 80$; taking the pipe sizes in order, we have

4x 20 equals	80
3x 60 equals	180
1x 175 equals	175
1x 380 equals	380
1x1050 equals	1,050
	1,865

From the table we see that a 7-inch pipe equals 1,600, which is too small to carry the load. An 8-inch pipe = 2,250, and this will be the size required. To find the actual areas of the various sizes would require considerable figuring, and the result would be a pipe *larger* than is actually required, bearing in mind that all pipes are to each other as the square of their diameter, and also the revised condition of the "doubling the size of a pipe increasing the capacity four times" rule.

CONCERNING ELECTROLYSIS MITIGATION.

A booklet published by the Bureau of Standards, Department of Commerce, Washington, D. C., gives a brief general statement regarding electrolysis and corrosion and presents a detailed discussion of the various methods of electrolysis mitigation that have been proposed or tried for protecting underground structures. Methods of mitigation are treated under two heads, namely, those applicable to pipes and those applicable to the railway return system. The conclusion is drawn that while certain of the methods applicable to pipes, particularly pipe drainage and insulating joints, are often valuable, they should in general be used as auxiliary measures only, the chief reliance being placed on reducing potential drops in the railway return to reasonably low values. Where return feeders are necessary for accomplishing this, insulated feeders are preferable because more economical.

In the last chapter there is presented a discussion of the principles on which regulations concerning electrolysis mitigation should be based, and the responsibilities of owners of underground utilities as well as of the railway companies are emphasized.

W. R. Smith, of Frankford, Pa., has the contract for plumbing ten houses which are being erected in Wissionining, Pa.

Sales Talks—Swatting the Lie*

By WILLIAM ROBERT MARSHALL

I WAS sitting in the office of a plumber friend of mine some time ago, when an elderly lady and gentleman came in to pay a bill, or I should more properly say, an elderly lady, accompanied by an elderly gentleman, came in to pay a bill.

As they approached the bookkeeper's window the bookkeeper greeted them with a pleasant "Good morning."

"Good mornin'," replied the lady, grouchedly, "I came in to pay this plumber bill," she added, placing on the window ledge a large hand bag and starting a search in that mystery of mysteries.

"Yes, Madame," meekly replied the bookkeeper.

Having found the bill she spread it out on the ledge in front of the bookkeeper and icily remarked: "You have charged me for two hours' plumbers' time."

"Yes, Madame," placidly replied the bookkeeper, "that's correct, two hours' time."

"Oh, it is, is it?" she said, smiling sardonically. "Well, I want to tell you that that plumber only worked one hour and thirty-five minutes' time in our house."

"Yes, Madame," agreed the bookkeeper, resignedly "but you see, we have to pay the men for the time they are gone, from the time they leave the shop until they return, and he was gone two hours."

"Oh, I suppose so," she said haughtily, "only I wanted you to know, he only worked one hour and thirty-five minutes in *our house*."

"Yes, Madame," replied the bookkeeper calmly waiting—and as I looked at the boss he slyly winked at me.

"Well, I suppose I will have to pay it," she said resignedly. "Your pen, please, I will give you a check."

The bookkeeper silently offered her the pen, and in the dead calm that followed, as she wrote the check, the old gentleman slipped over to the window and put the following conundrum to the bookkeeper:

"How do we know," he asked with a tone of daring, "that he didn't do some other job on the way to or from our house, *that we are paying for?*"

"We don't do that," answered the bookkeeper indignantly.

"Huh," snorted the old man incredulously.

"We wouldn't last long, if we did that kind of business," insisted the bookkeeper, as he blotted the check.

"We wouldn't last long if we did that kind of business," he added with an air of finality as he receipted the bill, which she took haughtily and put in her bag.

"How do we know," he asked with a tone of daring, "that he didn't do some other job on the way to or from our house, that we are paying for?" "We don't do that," answered the bookkeeper indignantly.

*Copyrighted 1915, by William Robert Marshall.

As they went out he closed the window and turned to us and remarked disgustedly: "Isn't it h——, how some people always think they are getting stung when they have to pay a plumber's bill?"

"You ought to be used to it by this time," replied the boss laughingly.

"Well, I am," answered the bookkeeper, sourly, "but it makes me mad every time I get that line of chatter from people, who ought to know better."

"Do they know better?" I asked quietly.

"Do they know better!" snorted the bookkeeper, amazed at my apparently fool question, "of course, they do."

"I am not so sure of that," I replied.

"What do you mean?" asked the boss indignantly, suddenly taking an interest in the conversation. "Do you think *we pad our time charges?*"

"No," I answered, "I don't think that you pad your time charges, but I am positive that those two old people are sure that you do."

"We can't help it, if they do," he snarled. "We don't do it, and they ought to know that no firm could do those things and last."

"But nevertheless *they do think it, don't they?*" I persisted.

"I suppose they do," he admitted unwillingly, "but what can *we* do about it?"

"People just naturally believe that a plumber is a robber, anyway, no matter how you treat them," he added resentfully.

"That may be true to a great extent." I assented consolingly, "but what are *you* doing to put them *right* on the proposition?"

"Doing, doing!" he reiterated vehemently, throwing his cigar into the cuspidor. *"What can we do?"*

"Well," I answered, "you might try swatting the lie early in the season."

"Swatting the lie!" he blinked in perplexity. "What do you mean by that remark?"

"I mean," I replied, "just what I said, you might try to help disabuse the minds of your customers regarding that belief instead of accepting it as a natural sequence to your bill."

"I don't get you," he grumbled, disgustedly, "how in ——— am I going to do it? Put up a sign: *We are honest plumbers. We don't rob the people. Our bills are honest bills.*"

He continued heatedly: "Set ourselves up as *exceptianal*, hey? That *would* help the business and get me in *fine* with the rest of the plumbers in this town, wouldn't it?"

"No," he grumbled, "I guess we will have to take it and forget it."

"I don't see it that way," I objected.

"What would you do about it?" he demanded angrily.

"Well," I objected, "just because the public, for some reason, well founded or otherwise, has a grudge against the plumber, I can't see any reason that you should all sit down and say, 'Oh, it's always been that way and always will be and we might as well accept it and make the best of it, it's too bad, but we can't help it.'"

"But," he insisted, "how are you going to overcome it?"

"I'll put a suggestion in shape and mail it to you," I answered and left.

Knowing that he hired good men, carried a good line of plumbing fixtures and aimed to give everyone a square deal, I sent him the following suggestion, which, when printed on a bristol card, envelope size and enclosed with the bill, in a great measure solved his collection troubles about overcharge time claims.

Our Policy.

We aim to employ men who are the most capable and responsible mechanics we can secure. They cost us more money, but are worth it, by being capable to do thorough and skillful work under any circumstances, without unnecessary loss of time or material.

It is our desire to furnish you expert service at a minimum cost, consistent with good business practice.

Time charged is based on actual time credit given on our payroll ledger, which is the elapsed time between their leaving our shop for the job and their return.

We guarantee our work and material to be first class in every respect, and will consider it a favor to have you advise us any time it proves otherwise.

A Plumber Co.

Publicity is the death of evil, ceaseless vigilance in swatting the lie born of suspicion, animosity and resentment will do much to annihilate the evil of ambiguousness in our industrial and social life. *Try it.*

STABILITY AND ADVERTISING, ELEMENTS OF SUCCESS.

"We have been in business only six years and made our start with nothing but our working experience." Thus spoke C. H. McCoid, of the plumbing and heating firm of McCoid Bros., of Clinton, Ill., in an interview with a representative of "Domestic Engineering" some time ago.

"During that time we have enjoyed a paying business," he continued, "and we have retained our customers, and are securing new ones every year, which we do by giving them first-class material and workmanship, for which we get good prices.

"Here to Stay," an Element of Success.

, "We own our building, and the taxes and insurance make our overhead expense greater than when in a rented place, but we can get better prices because the public feel that we are here to stay behind our work.

"We think the plumbing and heating business is a merchandising line, and we carry a complete line of accessories which help to make an attractive window display."

Advertise Their Business.

McCoid Bros. believe that it pays to advertise and that it is a wonderfully useful influence in promoting business. They advertise their plumbing and heating business in local moving picture shows, changing the slides from time to time. They have large metal signs tacked up in and about the city, while in rural parks and crossroads settees with the firm's advertisement on the back of them are here and there in evidence.

The firm believes in discounting its bills promptly, but not to accommodate customers, for McCoid Bros. depend on them to furnish cash to do this with, as they explain that a job is not complete until it is settled for.

The McCoid Bros. own their own Ford which they find they could not afford to do without for they consider it an asset in both business and pleasure.

Questions and Answers

HOW TO DRAIN LOW CELLAR.

Editor "Domestic Engineering":—Kindly help us to solve the following situation:

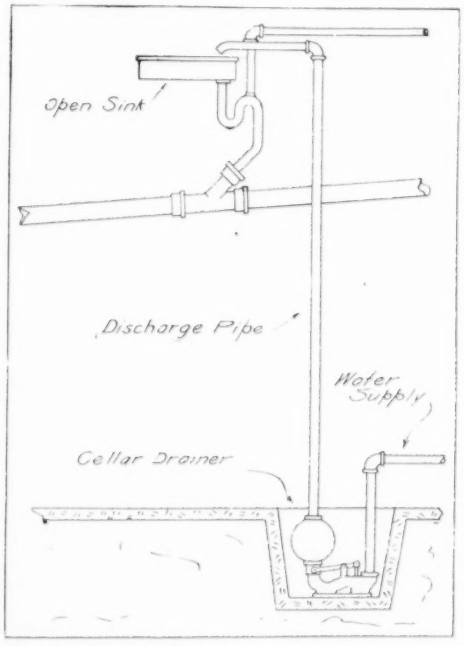
The cellar drainage in a house in which we are installing the plumbing cannot be drained with the house drain, as the latter runs overhead. Can you inform us how we can dispose of this drainage?

Brookfield, Mass. B. and W.

The method generally employed under such conditions as those mentioned by "B and W" is to use what is called a cellar drainer by means of which the drainage water can be raised and discharged into the cellar drain.

The cellar drainer, of which there are several styles on the market, works automatically, the operating power being either steam or water pressure.

The drainer is placed in the pit or well into which the cellar water drains, as shown in our illustration. The



How to Drain Low Cellars.

float rises and falls as the water rises and falls, and when it has been raised by the water to a certain point it trips a valve which admits the water. This acts in the nature of an injector, creating vacuum which draws the water into the drainer, water pressure then forcing it up to the point of discharge.

Within certain limits, five pounds of pressure is needed for each foot of lift.

Such a device should not discharge directly into the drainage system, but into an open sink or other fixture properly trapped into the house drain and vented.

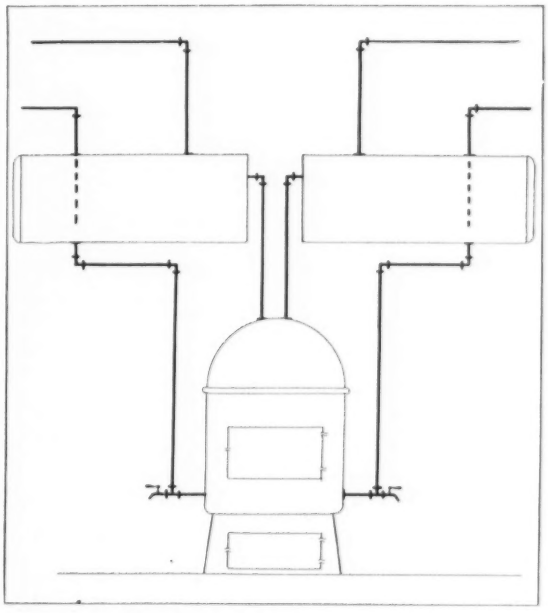
After the drainer has operated and discharged the contents of the drainer pit, the float will drop, closing the valve, and it is then in readiness for the next operation.

HEATING TWO SEPARATE WATER TANKS.

Editor "Domestic Engineering":—We wish to install a tank heater to heat two separate hot water tanks, and arrange in some way to keep each supply system entirely distinct from the other, so that each tank will supply water registered by its own meter. Can you show us how this can be done?

New York City. Two Brothers.

As the best method for doing this work, we would advise "Two Brothers" to use a heater built with two



Heating two Tanks from one Boiler.

separate sections. This would be equivalent to having two separate heaters, and would solve the problem very easily.

If for any reason this is not practicable, we see no other way than to use the heater for the larger hot water tank, if there is any difference in their size, and install a separate coil for the other tank. The first method is the better method, however.

TO PREVENT ROILING OF WATER IN RANGE BOILER.

Editor "Domestic Engineering":—Can you inform me of some method of preventing the roiling of water in range boilers by the discharge of cold water from the boiler?

Mobile, Ala. Journeyman.

No doubt "Journeyman" alludes to the stirring up of the sediment in the bottom of the range boiler, due to the downward force of the discharge of water under pressure, through the boiler tube.

We believe the remedy shown in our illustration, Fig. 1, will help this condition materially. This consists in cap-

ping the lower end of the boiler tube, thus preventing the downward discharge of water, and providing for the discharge by drilling a number of holes in the lower part

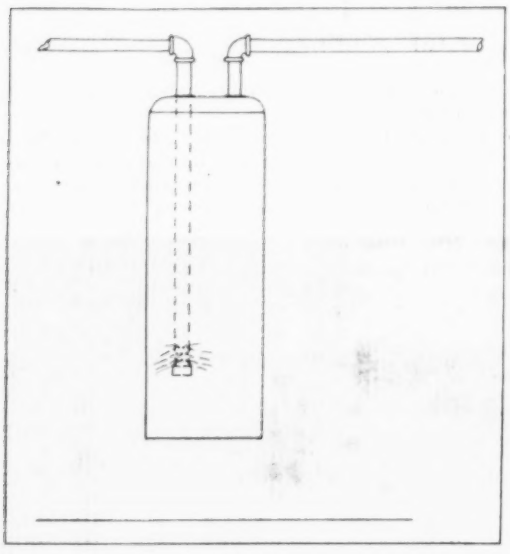


Fig. 1.

of the pipe, as shown. These holes should be of such size that they will not be in danger of closing up with rust.

Through these holes the water will discharge sidewise, thus overcoming much of the trouble from stirring up the sediment.

TROUBLED WITH RUSTY AND BLACK WATER.

Editor "Domestic Engineering":—We are having trouble with the plumbing in a residence. The piping has been in seven years, and for the first year or two there was no trouble. It is a soft water system with a water lift, galvanized iron compression tank and hot water tank, with copper heating coils. This is a circulation job. Galvanized wrought iron pipe is used in basement and in walls, and lead pipe under bath room floors. The cistern is filtered. Roof gutters, flushings and down spouts are of copper. The water runs clear and then cloudy, sometimes rusty and sometimes black. This comes from an accumulation which has collected on the inside of the pipe.

Can you tell us the cause and the remedy for this trouble?

Lima, O. M. & C.

We judge that soft water is used in the system mentioned by correspondent, for the reason that the public supply is too hard.

It is a well-known fact that iron is most severely attacked by the purest water. It is also a fact that rain water is the purest water used in domestic supply work. In our opinion these two facts show the cause of the trouble which correspondent describes.

While the galvanizing of compression tank, hot water tank and piping was new there was no trouble, but we believe that as time went on the water has attacked the iron wherever the galvanizing was thin or flaked off, at threads where the threading had taken off the galvanizing, etc., and as the surface attacked has increased in extent, the rusting process has increased. If our diagnosis is correct it is a difficult thing to remedy, except at considerable expense.

Probably the trouble is worse on the hot water than on the cold water, although nothing is said on this point. We might add also, that rusting may also come from the cast iron water front. It would be well before doing anything else to clean the water front thoroughly, and see whether there is any improvement. We would also suggest brass range connections, and a copper boiler in place of the galvanized boiler. These changes would cover the parts of the system which are most susceptible to the rusting process.

The following idea has occurred to us, although we have never seen it tried: If the public supply is filled with lime, as we suspect that it may be, correspondent probably knows that if used in the range boiler, it would soon form a coating on the water front, connections and boiler, in time probably filling water front and connections. Our idea would be to use this supply for the range boiler for a time, with the idea of forming a protective coating, and then go back to the soft water again. We make this suggestion for whatever it is worth, and some of our readers may know whether it would do the work or not.

NEW PROCESS FOR LEAD JOINTS.

A new material called "amalgaline" has been introduced in England for making joints between lead surfaces, and it is said to have been widely adopted by ship builders in Scotland and the north of England, as it is useful in flanging and the seaming of lead used in lining refrigerating chambers. The system is not confined to use on small pipes, says "Engineering Digest," but is used in an ordinary way on pipes varying in bore from 3 inches to 9 inches. It is an autogenous process, but instead of using an intense local heat the fusion is effected by the action of the amalgaline on the surfaces to be welded, forming an amalgamation between the lead of the flange and the lead pipe. The material is in the form of a metallic ribbon 0.002 inch thick, practically a pure metal, which, when placed between the surfaces of lead and subjected to heat, fuses at a temperature of 160 degrees—lower than the actual fusing point of lead—and in fusing it causes the lead surfaces to run together at a lower melting point than that of the body of the lead. This running together has an autogenous effect, and the minute particles of amalgaline are dissipated into the body of the lead, which, by reason of the absorption, becomes stronger at the junction than elsewhere.

Announcement has been made of the appointment of Wallace M. Parker, as city plumbing inspector for the city of Lexington, Ky. Mr. Parker passed a very creditable examination with a very high mark. The examination papers were passed on by the Cincinnati Civil Service Commission. Mr. Parker for a number of years was in charge of all plumbing on Elmendorf Farm, the estate of the late J. B. Haggin, of Lexington. He entered on his new duties August 1st.

The Board of Health, of Lexington, Ky., reports that from the time the plumbing code ordinance went into effect, June 14th, seventy-eight plumbing permits were issued for work aggregating $11,520 up to August 1st. Until Mr. Parker was appointed plumbing inspector, John R. Richards, the housing inspector, handled the inspections, but received no fees for the inspections made. Starting with August 1st all inspections must be paid for. The cost of a permit is $2.50, and each inspection adds a charge of $1 to the fee. According to Mr. Richards, the receipts from June 14th to August 1st would have been $289, if all fees had been charged.

The Trade's Picnic Season at Its Height

Master Plumbers' Associations in Many Parts of the Country Hold Successful Outings

BRONX PLUMBERS ENJOY ANNUAL OUTING.

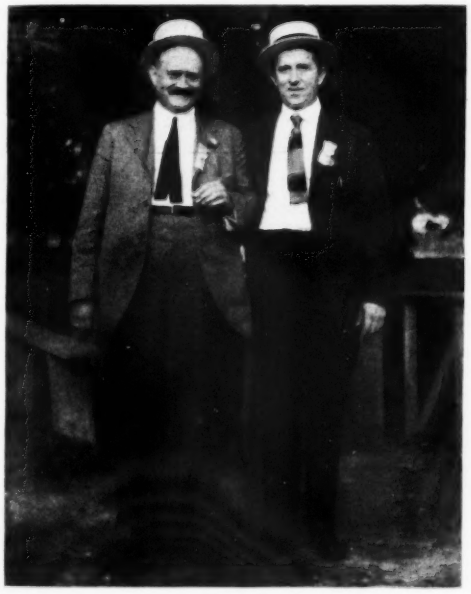
The annual outing of the Bronx Branch of the Master Plumbers' Association of New York City was held on Thursday, August 5th, and proved to be all that the efficient committee had intended it to be and then some.

Three hundred or more thronged Hoffmann's Park in Westchester, where the festivities took place. The day was crowded with enjoyable events, commencing with breakfast which served to fortify the merrymakers for a strenuous program of athletic feats staged during the hours before dinner. Musical entertainment was furnished throughout the day by a competent band.

The ball game, an annual affair between the salesmen and plumbers, went to the Knights of the Grip, despite the wonderful playing of Steve Welch. Steve is one of those players, who improve with age. Each year he blooms out with a fresh bunch of tricks, which alone, under ordinary circumstances, would insure success for his team; but the fleet-footed salesmen proved too much for him this year. The score was tragic, so much so that we refuse to print it.

When the runs were finally all gathered in and neatly tucked away on the card for future reference, the field events were called.

Coroner William J. Flynn will have to work at scratch



Asa Crookston and President Fred Smallstitch at the Bronx Master Plumbers' Outing.

in the next heavy weight run. He made the fifty yards in nothing and two seconds and won the fountain pen.

The hundred-yard (so to speak) dash went to T. Byrnes. A stick pin was his reward.

S. L. Greason made the three hundred yards ahead of his opponents and received a set of cuff buttons.

W. J. Boyle hopped, skipped and jumped so neatly that he was presented with a pocket knife.

E. Duklauer carried off the honors and an "umbreller" in the potato race.

All this while the competent lieutenants of Aug. Hoffmann were preparing for the crowning feature of the day. Large caldrons of clams, lobster, fish, chicken, corn, etc., topped off with gigantic melons, made up the component

Some of the Bronx Master Plumbers resting just before the Bake.

parts of a real old fashioned bake. This the picknickers presently attacked in effective fashion. Thus ended a red-letter day in Bronx Association's social activities.

The committee which arranged the day's sport was composed of J. P. Muller, J. W. Rowan, W. Wilcox, D. Devine, J. Theiss, O. Johnson, S. Welch and J. Smith.

COLUMBUS MASTER PLUMBERS' OUTING.

On Wednesday, July 28th, the members of the Master Plumbers' Association, of Columbus, O., accompanied by their families, friends and other guests, left the C. D. & M. Ry. station in special cars for Glen Mary Park, Glen Mary, O., where a delightful day was spent.

Shortly after their arrival at the park the ladies served a very palatable luncheon, which the picnickers relished immensely. At 2 p. m. the various games of the day were started, the winners of events on the program being as follows:

Fat Men's Race, 50 yard dash, won by Phil Dreher.

Ladies' Race, 40 yards, won by Mrs. Love.

Lean Men's Race, 60 yards, won by Mr. White.

Ladies' Baseball Throwing Contest, won by Mrs. Richards.

Girls' Race, under 10 years of age, 30 yards, won by Miss Alice Richards.

Girls' Race, over 10 years of age, 40 yards, won by Miss Vera Sedden.

Boys' race, under 10 years of age, 30 yards, won by Jack Seiders.

Men's Baseball Throwing Contest, won by J. Edwards.

Needle Threading Contest for Ladies, won by Mrs. Zack.

Men's Baseball Throwing Contest, won by Evan Edwards.

The line-up in the baseball game between the plumbers

and the salesmen, in which the latter won by a score of 11 to 4, was as follows:

Salesmen.		Plumbers.
Bill Leach	Pitcher	G. W. Michaelis
Jack Seiders	Catcher	Tom Love
Charles Chapman	First Base	Jim Dolan
W. Staley	Second Base	Nolan Perry
J Faught	Third Base	Evan Edwards
Bob Ottke	Shortstop	Frank Blair
Phil Dreher	Right Field	E. Skipper
Ed Cassin	Left Field	Walter Turner
J. White	Center Field	Alden Perry

The umpires during the game were Sam Esswein and N. Ross, both of whom officiated in a square and impartial manner. The match between the salesmen and the plumbers was a fast one from start to finish, and the clever playing of both sides held the marked attention of the crowd.

An amusing feature of the day's program was a pie-eating contest between Bill Schneider and J. Sedden. It was won by Mr. Schneider, otherwise known as "Big Bill." No wonder he won.

Among the members of the Columbus Association of Master Plumbers who were present at the outing were: Sam Esswein, W. Turner, J. Doser, William Schneider, Thompson Love, "Rosey" Rose, Perry Brothers, Fischer & Blair, W. Thorp, Evan Edwards, Robert Dolan, Wuellner & Theado, G. L. Bebb, Dorn & Andrus, Hannon Bros., A. W. Reynolds and W. H. Conklin Co.

The supply salesmen present were: "Bill" Leach, Ed Cassin and Bob Ottke, of the Standard Sanitary Mfg. Co., of Pittsburgh, Pa.; C. Chapman, of the Union Radiator Co., Philadelphia; Jack Seiders and William E. Mettle, of Potts-Seiders Supply Co., Columbus; W. Staley, of the Columbus Supply Co., Columbus; W. Ross, of the Scioto Valley Supply Co., Columbus, and J. Faught, of the Woodward-Wanger Co., of Philadelphia.

LAPORTE MASTER PLUMBERS' ANNUAL OUTING.

There are picnics and picnics, but a Hoosier picnic is some picnic, because the picnickers are mostly Hoosiers. There is never a dull moment in their outing programs, for the Hoosier spirit seems to permeate everything through and through.

This was true of the annual picnic of a jolly group of

Some of the La Porte Master Plumbers and Their Ladies on the Beach at Michigan City, Ind.

Hoosier master plumbers of LaPorte, Ind., who on Thursday morning, July 29th, started out in four automobiles for a day's recreation in rustic surroundings. Accompanied by their wives they drove to Boot Jack Inn, which is about 14 miles east of LaPorte, arriving there about noon, just in time for a chicken dinner, which was voted the best they had ever put away. The Ladies' Auxiliary of the LaPorte Association of Master Plumbers insisted that the treat was certainly par excellence.

After dinner the ladies held a little convention among themselves and entertained each other with such pleasant subjects as "How Old Is Ann?" to "Why Do Hens Lay Eggs in Other People's Yards?" etc. While the fair sex

La Porte Master Plumbers and Their Ladies on Their Outing Near Booth Jack Inn.

were thus enjoying themselves in social merriment their husbands were intent upon a variety of athletic feats.

At 3:30 p. m. the picnickers started for Michigan City, which is about 18 miles from Boot Jack, arriving there at 5 o'clock. Here a stop was made while refreshments were being served. Before proceeding to the beach the party visited the Staiger Hardware Co.'s store, where they were right royally received. After roaming around on the beach the party had their faces snapped while seated about on the sand. At 7 o'clock luncheon was served at the Tyrell hotel, after which all joined in a theater party.

Speaking of the success of the affair, A. W. Bachmann, secretary of the association, gave out for publication the following bit of picnic advice: "Have the ladies with you in all social affairs, and you will create true friendship among all the members of your association."

PATERSON PLUMBERS AGAIN VISIT CONEY.

The master plumbers of Paterson, N. J., spent another delightful day at Coney Island, on the occasion of their annual outing. Saturday, August 7th, was the day, and a record attendance was on hand to do justice to the efforts of the committee, which had the arrangements in hand.

The party left Paterson on the early New York train, and from the latter place a delightful sail down the bay to the famous seaside resort was enjoyed.

Louis Stauch was again host to the visiting plumbers, and another of his special plumbers' luncheons was in waiting upon their arrival.

Following lunch John Campbell lost no time in organizing his band of pipers. Bag pipes were what he wanted for equipment, but Coney's supply of those distinctive Scotch instruments was exhausted. Or perhaps, with Stauch and Feltman, the leading commercial lights of "the Island," in command, nothing so alien as a Scotch bag pipe ever finds its way to Coney. However, Campbell had to be satisfied with pipes of Teutonic origin and no bags, and then cacophony reigned supreme the length of Surf Avenue until call for the annual banquet was heard.

The banquet is always a feature of the Paterson plumb-

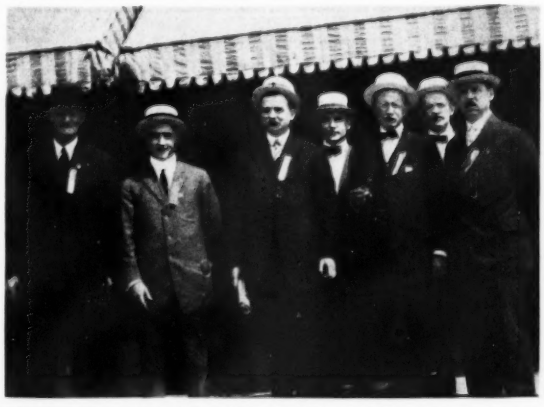
ers' fiesta, and this year Stauch overstepped even his previous high mark in food and service.

Dinner over, the party set out in groups of six or more to attack the varied attractions of Surf Avenue and the Bowery.

Steeplechase Park, where the Paterson plumbers are always welcome, even if they do get noisy on occasion, was the center of attraction. And it must have been close to midnight when the major portion of the party got through with their sight-seeing and on their way home.

At the Paterson Outing.—From left to right: Robert Beaumont, James McMahon, Geo. H. Neal, J. Caddigan, Jr., Wm. H. Gurney and Fred Tattersall.

The committee who planned so successfully this year was composed of George S. O'Neil, chairman; John Baker, secretary; Frank Vreeland, J. J. Maher, F. A. McBride and R. E. Quinn.



William Delhagen and Six Others of the Paterson Party "on the Bowery."

NEW BEDFORD PLUMBERS' OUTING.

It takes more than a rain storm—even if it be of almost cloudburst proportions—to dampen the ardor of a party of master plumbers. The members of the New Bedford (Mass.) Association proved this when on Wednesday, August 4th, they held their annual outing and clambake at Perry's Grove, near New Bedford. It was one of the rainiest of a month of rainy days which New England has "enjoyed" this summer, but notwithstanding this 150 plumbers and their guests participated in the event.

The outdoor program of sports had to be postponed until next year, but this only gave more time for the other features—the dinner, the speechmaking and the like. Officers of the state association and of nearby local associations as well as a number of salesmen were guests and did their part to make the day an enjoyable one.

The committee in charge was composed of August Smith, chairman; E. P. Hirst, Robert Reynolds, Ernest Margeson and John Doyle, and they reaped the reward of their hard work in arranging the affair in the words of praise from the happy throng.

BOSTON MASTER PLUMBERS' OUTING.

This year's annual outing of the Master Plumbers' Association of Boston and Vicinity promises to be one of the most largely attended of a long line of successful midsummer meetings. It is to be held at Nantasket Beach instead of at Bass Point, Nahant, where several former outings have been held, and not the least pleasing feature of the occasion will be the long harbor sail consuming an hour each way. Arrangements have been made so that the members may make the trip on any of the regular boats during the afternoon, but if they don't get there in time for the dinner at Villa Napoli they will be the losers for Manager Di Pesa is planning to put before the plumbers one of his best dinners and a cabaret of exceptional attractiveness. Secretary Tucker reports that the demand for tickets is exceedingly large, and it will be an excellent opportunity for members to meet the many newcomers in the association. Incidentally the date is next Wednesday, August 18. So great is the interest in the event that a number of manufacturers have secured spaces at the picnic ground for the purpose of exhibiting plumbing and heating goods.

PITTSTON PLUMBERS PREPARE FOR PICNIC.

The eighth annual outing of the Master Plumbers' Association of Pittston, Pa., will be held on Saturday, August 21st. The party will spend the day at a delightful spot half way between Rocky Glen and Moosic Station, on the Laurel Line.

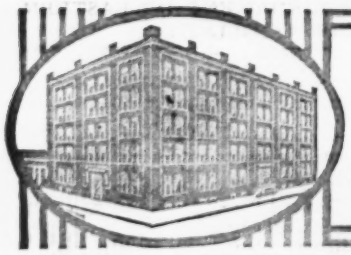
Obituary

Addison W. Beals.

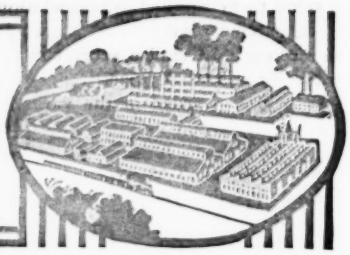
Addison W. Beals, who for nearly half a century conducted a plumbing establishment in West Brookfield, Mass., died at the home of a relative in Springfield, on July 23rd, in his eightieth year. Mr. Beals was a native of Williamsburg, Mass., but moved to Brookfield more than forty-five years ago. His wife died a few months ago.

Edward S. Bradley.

Edward S. Bradley, of Manchester, Mass., president of the Massachusetts North Shore Master Plumbers' Association and prominently identified with association work throughout the state, died Tuesday night, August 10th, at the Beverly hospital. Mr. Bradley was 46 years of age and had lived in Manchester 18 years operating, in addition to his plumbing business, the Manchester Steam Laundry. He was born in Lawrence, Mass. During his residence in Manchester Mr. Bradley had become prominent in business, social and church circles. A widow and eight children survive.



Among the Wholesalers and Manufacturers



C. C. TODD ELECTED VICE-PRESIDENT OF CENTRAL FOUNDRY CO.

At a meeting of the board of directors of the Central Foundry Co., held at its main offices, in New York City, on Thursday, August 5th, C. C. Todd was unanimously elected vice-president of the company, and he will hereafter make his headquarters at the company's main offices in New York City. Mr. Todd has for many years been manager of the Central Foundry Co.'s branch office in Chicago, and he has a host of friends here, who will congratulate him on his well-deserved promotion, while they will regret his departure from this territory.

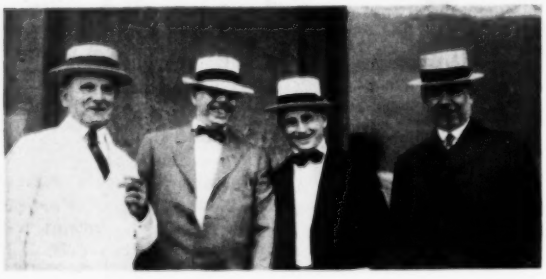
COMPANIES RECENTLY INCORPORATED.

The Central Faucet Co., of Chicago, has been incorporated with a capital of $2,000, to manufacture plumbing specialties. The incorporators are: William Feldman, Julius Weiss and Simon D. Herman.

The Augenstein Plumbing Supply Co., of Newark, N. J., has been incorporated with a capital of $50,000.

ANNUAL OUTING OF STANDARD MFG. CO., OF CLEVELAND, O.

The annual outing of the employees of the Cleveland branch of the Standard Manufacturing Co. was held at Willoughbeach Park, near Cleveland, O., on Saturday, July 31st, under the supervision of Albert Webb, local manager. Two special cars conveyed the employees and their families to and from the park, leaving the Standard plant at noon. The amusements consisted of a baseball game between the Officemen and the Salesmen, which was won by the former by a score of 7 to 6. Immediately following this there were field sports of all kinds, valuable prizes being awarded the winners of each event, which were donated by the company. In the evening at the dance pavilion a waltzing contest was held, which was won by Miss Herman, the cashier. The program for the day was arranged by the entertainment committee, consisting of Miss Herman, L. W. Davis and Sam Smith. Just before leaving the park at 9 o'clock it was voted that this outing had been the most successful in the history of the branch, and as the word was given for the cars to leave three rousing cheers were given for Manager Webb.



At the Summer Meeting of the Central Supply Association, held recently in Chicago.— From left to right they are: Charles Pfau, of the Pfau Mfg. Co., Cincinnati; H. B. Hallett, of W. A. Case & Sons Mfg. Co., Buffalo; James F. Redman, representative of James M. Teahen, Detroit; and Geo. M. Snyder, of the Union Sanitary Mfg. Co., Noblesville, Ind.

WESTERN TRADE GOLF ASSOCIATION'S MONTHLY TOURNAMENT.

Auspicious weather conditions again favored the regular monthly tournament of the Western Trade Golf Association, which was held Tuesday, August 10th, on the splendid links of the Westward Ho Golf Club, at Sixty-fifth and Bloomingdale Avenues, Oak Park, Ill.

Twenty-four members of the association participated in the day's sport. The players contested keenly for the various prizes offered for exceptional skill in swatting the gutta percha spheres. The course which is one of the finest in the country won the enthusiastic commendation of the association members. The putting greens, smooth as velvet, evoked special praise from the players. It was said that the total length of the course is 5,953 yards, with a par of 74, and bogey 80.

Eugene Buehler, W. B. Dale, L. C. Huckins and J. F. Tuttle; all Crack Players.

Some gratifying scores were made during the day, and at the banquet in the club house, at 6:45 p. m., the winners were the recipients of prizes and congratulations. Votes of thanks were extended to the management of the club, and to Paul Blatchford and Eugene Buehler for their efforts in securing the use of the grounds for the association members.

Afternoon Play.

In the afternoon play for low net score, W. B. Dale blossomed forth as the winner with a net score of 76—

the same to be applied on association cup. Paul Blatchford triumphed again in the putting and approaching contest, turning in a choice score of 9, for which he became eligible for a special prize.

The prizes awarded in the various flights were as follows:

First Flight.—F. A. Gregory, Jr.—first prize, golf bag. Runner-up prize, T. F. Johnson, special golf stick.

Second Flight.—H. E. Keeler—first prize, silver-plated

One of the Reasons Why Paul Blatchford Did Not Get Low Net Score.

tray. Runner-up prize—Paul Blatchford, silver-plated tray.

Third Flight.—Paul Blatchford—first prize, half a dozen silver-mounted ramekins.

Fourth Flight.—C. H. Bishop—first prize, one-half dozen silver-mounted ramekins. Runner-up prize—E. D. Finlay, silver-mounted pie tray.

Fifth Flight.—C. S. Pitkin—first prize, cocktail shaker. Runner-up prize—J. C. Hornung, silver-mounted pin tray.

Individual Scores.

	Gross	Handicap	Net
T. N. Johnson	103	13	90
F. A. Gregory, Jr.	94	16	78
J. M. McDonald	93	6	87
H. M. Sedgwick	116	17	99
H. E. Keeler	99	22	77
E. W. Sanborn	105	18	87
D. E. McCabe	105	22	83
Paul Blatchford	100	13	87
Eugene Buehler	98	15	83
W. B. Dale	100	24	76
J. F. Tuttle	104	14	90
L. C. Huckins	104	18	86
C. R. Elliott	147	24	123
E. D. Finlay	135	24	111
J. P. Dugger	119	24	95
C. H. Bishop	113	24	89
F. R. Bishop	156	24	132
T. J. Cusack, Jr.	155	24	131
J. C. Hornung	116	24	92
A. Murphy	146	24	122
C. S. Pitkin	115	24	91

The next tournament of the association will be held at the links of the Glen Oak Country Club, the date being tentatively set for Tuesday, September 14th.

THE MIDSUMMER TOURNAMENT OF EASTERN TRADE GOLF ASSOCIATION.

The midsummer tournament of the Eastern Trade Golf Association was held last week under ideal weather conditions at Arcola Country Club, Arcola, N. Y. Except for a

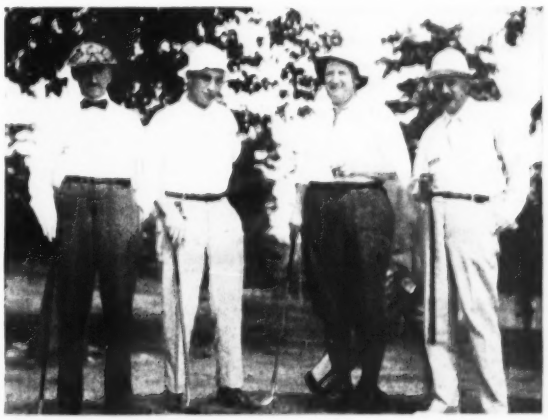
W. W. Hubbard, C. W. Wood, J. I. Simmons and President A. S. Armagnac at Eastern Trade Golf Association's Midsummer Tournament.

few washouts at bunkers on the slopes the course was in fine condition.

Thirty players made the morning and afternoon rounds, which constituted the day's program.

The Arcola Country Club ranks as one of the best equipped in the state of New Jersey in regard to accommodations and service. Mr. Shea, steward of the club, was pronounced the best in his line.

In the summer tournament event, an 18-hole medal play handicap, D. H. Roney made 80 and carried off a cup as first prize. R. Hauxwell and W. M. Cosgrove, each with



T. E. Oliver, B. W. Bennett, L. S. Rothwell and N. N. Moneypenney at Eastern Trade Golf Association's Midsummer Meeting.

83, took second and third, respectively. The former received a handsome cigar humidor and the latter a belt.

The competition against bogey was captured by A. S. Armagnac and E. J. Hughes, with a net score of 80. A cake dish and drinking cups were the prizes. J. I. Simmons and J. Barton Garfield made the best ball foursome and received carving sets.

In addition to the fine equipment of the house and

course at Arcola the club offers some treats in point of location and scenery. The house surmounts the highest point on the grounds, and almost the entire course is in full view at a glance. In the evening the players dined at

J. J. Blackmore and G. W. Pierpont at Eastern Trade Golf Association's Midsummer Meeting.

the club house, when President Armagnac made the presentation of prizes.

The scores for both plays follow:

MORNING PLAY.

	Gross	Handicap	Net
W. W. Hubbard	108	20	88
T. E. Oliver	104	15	89
C. W. Wood	126	20	106
A. S. Armagnac	100	14	86
R. Hauxwell	95	12	83
D. H. Roney	101	21	80
W. H. Burnett	97	9	88
J. I. Simmons	92	3	89
F. J. Oliver	101	12	89
F. Yardley	110	15	95
L. S. Rothwell	115	15	100
C. C. Hale	107	10	97
J. M. Heatherton	116	30	86
B. W. Bennett	120	20	100
J. B. Garfield	85	0	85
E. J. Hughes	107	22	85
E. S. White	126	30	96
L. Moore	107	20	87
G. M. Scott	105	20	85
W. M. Cosgrove	115	32	83
G. W. Pierpont	117	20	97
J. J. Blackmore	115	20	95
L. G. Allen	119	30	89
M. E. Conran	129	26	103
W. T. Gilmour	127	24	103
W. W. Weller	109	10	99
E. S. Aitkin	126	30	96
J. J. Geoghegan	119	32	87
J. J. McKee	139	32	107
L. E. Eden	165	36	129

AFTERNOON PLAY.

	Gross	Handicap	Net
Hubbard and Wood	101	20	81
Hughes and Armagnac	94	14	80
Simmons and Garfield	79	0	79
Blackmore and Pierpont	98	15	83
Roney and Hauxwell	95	12	83
Bennett and Rothwell	106	20	86
Oliver and Moneypenney	114	12	102
Moore and Scott	101	20	81
Burnett and Gano	93	9	84
Hale and F. J. Oliver	96	10	86
Aitkin and Heatherton	105	17	88
Allen and Conran	106	26	80
Gilmour and Weller	109	20	89
McKee and Eden	114	30	84
Geoghegan and White	111	25	86

NINETEENTH ANNUAL OUTING OF THE THOS. MADDOCK'S SONS CO.

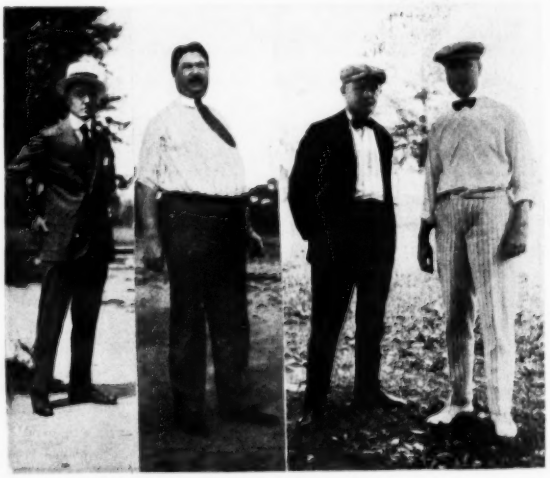
The nineteenth annual outing of the employes of the Thos. Maddock's Sons Co., of Trenton, N. J., was held at Burlington Island Park on Saturday, August 7th, and it was as successful, if not more so, than any of its eighteen predecessors.

The party, numbering nearly five hundred, embarked at Trenton at eight o'clock in the morning for a delightful sail down the Delaware to the scene of action.

The main feature of the day was a long program of athletic events, for which the company provided cash prizes for the successful contestants.

Luncheon and refreshing drinks were served in abundance throughout the day under the shade trees in the grove. The only credentials necessary on the part of the picnickers to secure these was a desire to have them.

Bathing and the hundred other recreations which the natural provisions of the island offer were freely indulged in. The regular scheduled events were presented in order and conducted by Mark Malpas, referee; D. Hopwood and



J. T. Spicer, John Kelly, H. S. Maddock and A. M. Maddock at the Annual Outing of the Thos. Maddock's Sons Co., of Trenton, N. J.

T. Carmody, judges; George Kreups, starter; Phil Weber, clerk, and H. E. Jones, announcer.

The 120-yard handicap was won by L. Rulius, first; C. Youmans, second; and R. Hewitt, third.

The 50-yard dash for girls went to Miss N. Longmuir.

In the potato race for girls Miss M. O'Hara and Miss Longmuir were successful. In the potato race for men A. Bainbridge, A. White and J. Ammisson finished in the order given.

The half-mile run went to Al White, Charles Youmans and H. Casswell.

The fifty-yard swim was won by W. Asbury, with W. Gasnicker, second, and W. Kelly, third.

The heavyweight race was given to John Kelly by default. He was the only qualified entrant on the field.

A ball game between Cook Y. M. C. A. and Thomas Maddock's Sons Co., part of the regular city league schedule, completed the athletic events.

The Maddock team put up a good stiff fight, but in spite of the fact that the entire plant was there to root for them the Y. M. C. A.'s took a good start.

Besides the employes of the company, with their wives and sweethearts, the party included Mr. and Mrs. H. S.

Waiting for the Games at the Outing of the Thos. Maddock's Sons Co., of Trenton, N. J.

Maddock, Mr. and Mrs. A. M. Maddock, and C. S. Maddock.

E. Crannage was president of the outing committee, E. D. Anderson, treasurer, and J. T. Spicer, secretary.

Unfortunately the rain, which had been threatening all day, commenced to fall about four o'clock, and the committee was compelled to postpone several of the athletic events.

The picnickers were unanimous in pronouncing the day a red letter one in the history of the company, and the return to Trenton on the boat that evening came all too soon for most of them.

SALES FORCE OF THOS. MADDOCK'S SONS CO. MEETS IN ANNUAL CONVENTION.

The annual meeting of the sales force of Thomas Maddock's Sons Co., of Trenton, N. J., took place this week at the company's home office. Their representatives from various parts of the field were on hand to participate in the discussions. Meetings were held in the morning and afternoon of each day from Monday to Saturday.

At the Recent Summer Meeting of the Central Supply Association.—From left to right: Charles A. Dobie, general sales manager of the McRae & Roberts Co., Detroit; F. M. Minninger, of the Chicago office of A. M. Byers Co., Pittsburgh.

BUILDING OPERATIONS IN JULY.

In the statistics of building, operations for the month of July show a gain, both in the totals and the percentage as compared with June, the outlook being more favorable than a month ago. The official reports of building permits issued in 71 cities, as compiled by the "American Contractor," Chicago, are as follows:

	July, 1915.	July, 1914.	Per cent. Gain	Per cent. Loss
Akron	$ 1,148,570	$ 405,960	183	..
Albany	416,760	692,005	...	40
Atlanta	613,146	495,902	26	..
Baltimore	695,375	837,458	...	17
Birmingham	223,987	468,385	...	52
Buffalo	1,494,000	985,000	52	..
Cedar Rapids	167,000	166,000	...	..
Chattanooga	32,373	116,370	...	72
Chicago	6,455,630	9,148,760	...	28
Cincinnati	1,275,100	1,055,330	21	..
Cleveland	2,319,280	2,532,050	...	8
Columbus	504,085	503,355	...	..
Dallas	656,124	941,580	...	30
Dayton	232,105	680,700	...	66
Denver	177,090	222,220	...	20
Des Moines	181,405	140,690	29	..
Detroit	2,663,080	3,121,750	...	15
Duluth	201,422	266,259	...	24
East Orange	144,848	169,522	...	14
Evansville	347,080	111,555	211	..
Ft. Wayne	201,580	333,500	...	39
Harrisburg	144,325	223,375	...	35
Hartford	441,767	311,985	41	..
Indianapolis	598,078	1,140,969	...	47
Kansas City	1,418,060	1,012,065	41	..
Lincoln	272,335	58,750	363	..
Little Rock	72,412	99,963	...	27
Los Angeles	936,873	2,081,396	...	55
Louisville	548,740	483,740	13	..
Memphis	245,285	333,006	...	26
Milwaukee	916,625	943,724	...	3
Minneapolis	1,474,265	1,326,095	11	..
Montclair	104,770	145,730	...	28
Nashville	220,665	454,039	...	51
Newark	581,133	1,172,043	...	50
New Haven	788,454	427,215	85	..
New Orleans	513,510	505,392	2	..
New York City	13,756,526	13,927,743	...	1
Manhattan	4,845,302	5,325,084	...	7
Bronx	1,963,993	2,263,983	...	13
Brooklyn	4,196,609	3,679,946	14	..
Queens	2,546,266	2,336,365	9	..
Richmond	204,355	322,365	...	37
Oklahoma	81,530	20,880	29	..
Omaha	556,780	402,665	38	..
Paterson	146,775	229,546	...	36
Peoria	119,840	193,100	...	38
Philadelphia	3,659,940	4,661,850	...	21
Pittsburgh	1,186,632	1,510,212	...	21
Portland	373,375	870,745	...	57
Richmond	328,667	461,949	...	29
Rochester	762,123	1,067,101	...	28
S. Lake City	174,550	238,750	...	27
S. Francisco	1,500,206	2,068,537	...	27
St. Joseph	143,135	80,967	77	..
St. Louis	615,148	1,287,859	...	52
St. Paul	770,018	1,053,220	...	27
Schenectady	239,148	278,210	...	14
Scranton	316,370	167,155	89	..
Seattle	315,010	2,520,590	...	87
Shreveport	46,884	149,212	...	68
Sioux City	218,200	320,050	...	32
Spokane	66,263	229,635	...	71
Springfield, Ill	63,500	74,800	...	15
Syracuse	752,957	854,363	...	12
Tacoma	31,161	96,551	...	68
Toledo	534,012	569,579	...	6
Topeka	168,991	64,190	162	..
Troy	125,161	51,827	141	..
Utica, N. Y.	112,205	138,375	...	19
Washington	1,424,207	1,192,882	19	..
Wilkes-Barre	45,133	108,413	...	58
Worcester	703,329	571,749	23	..
Total	$58,755,110	$69,776,073	...	16

Personal Mention

The big liner, puffing hugh volumes of smoke, was preparing to leave its dock. The decks were thick with American tourists who were fleeing Europe following the declaration of war. As the ship's captain was about to give the order to "cast off," a belated gentleman came rushing pell-mell up the gang plank. With a grip in hand, and an appreciative smile illuminating his coun-

Isaac E. May, President of the May Supply Co., of Anderson, Ind.

tenance, he leaped on deck right in the nick of time. Being a Hoosier, it was of course natural that he should be on deck in time—even if he had to dive in and swim. Now all this is alleged to have happened last August. It also appears that it was the only time on record that August, and May, and the war got mixed up with each other. Now May did not fancy August in Europe at all, at all. He decided that August in America and particularly in Anderson, Ind., was vastly preferable to his Hoosier temperament. And so it was that May (Isaac E.) escaped being detained as a suspected spy. He got back to Anderson just in time to attend to a lot of accumulated business correspondence addressed to Isaac E. May, President, May Supply Co., jobbers of plumbing and heating supplies, Anderson, Ind.

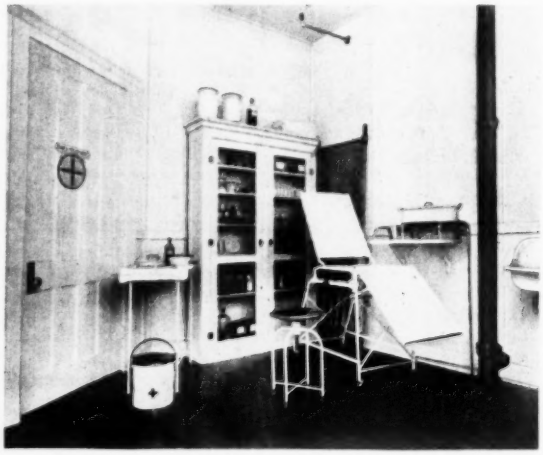
C. B. Baxter, of the promotional department of the Chicago office of the Standard Sanitary Mfg. Co., departed last Wednesday evening on a business trip through Iowa.

R. B. Busch, who for many years has been local manager of the Omaha, Neb., branch of the Crane Co., has recently retired from that office. He entered the employ of the company in 1889 as city salesman at Kansas City. Mr. Busch is succeeded by James E. Ludlow, formerly manager of Crane Co.'s branch at Dallas, Tex.

W. P. Davenport, general manager of the W. H. Page Boiler Co., of New York, motored to Booth Harbor, Me., last week. It is understood that the trip was in the nature of a hurry call from the fire department of Booth Harbor, of which Mr. Davenport is chief. At any rate he will spend a few weeks in Maine.

INTERNATIONAL HEATER CO.'S RED CROSS "FIRST AID" ROOM.

The motto "Safety First" has been widely heralded throughout the length and breadth of the land, but relatively few of us have seen the motto in actual operation. For an interesting demonstration of its practical workings, a visit to the plant of the International Heater Co., at Utica, N. Y., will prove highly interesting. Here you will learn how one well-known concern safeguards its employes. When you are escorted through the ware rooms, mounting floors, machine shops, etc., until you reach the superintendent's office, you will be impressed with the repetition of the motto "Safety First," placed wherever it can be seen and heeded. You will observe machines, which are especially protected to avoid accidents, not makeshift protection to satisfy the law, but thorough and well-arranged safeguards. And what will particularly impress you is the Red Cross Room. The employes fitted it up, but the company footed the bills. It was planned by Dr. H. H. Lenahan, who supervised both the arrangement and equipment. Practically everything known to medical science in rendering first aid to the injured is to be seen in this room. Concerning the value of this room, one of the officers of the concern



The Red Cross "First Aid" Room of the International Heater Co., at Utica, N. Y.

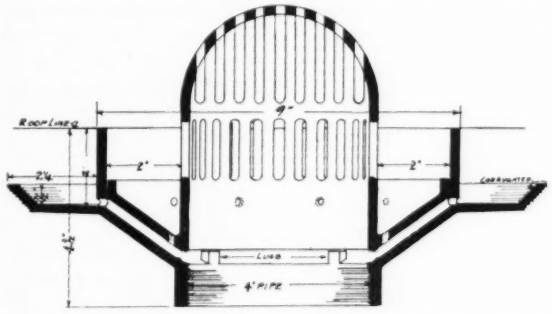
writes: "This is only one of the ways in which the company is cultivating the spirit of helpfulness and loyalty among its hundreds of employes. It is only one of the many interesting things to be seen in this mammoth plant. Are visitors allowed to see these? Not just allowed; they are wanted. Nothing pleases the management and men better than to show the wonderful processes by which iron is made into boilers and furnaces, at 'the sign of good heating.' But don't overlook the Safety First Red Cross First Aid Room when you visit us at Utica."

HAVE PUBLISHED REVISION SHEETS TO DATE.

Bareham & Saunders, 306 East Main Street, Rochester, N. Y., publishers of the "Plumbers' and Steam Fitters' Price Guide," announce that they have published a complete set of revision sheets covering all the recent changes in list and market prices, and that these sheets have been sent to all users of the "Price Guide." Those buying the book now will receive it with this up-to-date information.

THE "JOSAM" ROOF DRAIN WITH SEDIMENT CUP AND STRAINER.

The "Josam" patented roof drain with sediment cup and strainer, shown herewith, has just been placed on the market by the Josam Mfg. Co., of St. Louis, Mo. Its special feature is the extended flange or cup with drainage holes, the flange catching all leakage that may occur between the metal and the roof, and the drainage holes absorbing the leakage thereby insuring the ceiling and all points below against damage. This drain also has a removable sediment cup and a large bee hive cast iron strainer with large water-way surface, the removable cup making it an easy matter to get rid of tar, gravel or any other sediment which lodges there. The drain can be used on all buildings, whether their roofs are of wood or concrete. The above-named company will be glad to send interested parties full particulars on request.



The "Josam" Patented Roof Drain With Sediment Cup at Strainer.

The Metal Market

Steel and Iron.

The steel business during the past week did not reach the volume of bookings of the previous week but the market is as strong nevertheless. The number of inquiries furnished the best indicator of future activity. The Carnegie Steel Co. is booked up six months ahead on steel rounds running from 3 to 5 inches and it is not likely to take on much more of other dimensions because of the limit of its capacity being reached. Nearly all the bar mills and rail mills in the Pittsburgh district are filled with steel round tonnage for the better part of the current year, and it is reported that 3.25 cents per pound will be asked on new business. The increase in the price on shapes, bars and plates to 1.35 cents, announced by several mills, has not become general, although in the Pittsburgh district it is expected that mills will insist on that price for the last quarter, while in some quarters the impression exists that 1.40 cents will be secured before the end of the year.

Pig iron continues to improve under the influence of speculative activity and numerous inquiries by foundries. Prices are advancing in all districts and melters are trying to close all or part of next year's requirements at present prices. Unusual activity developed in the Ohio district and valley, and business was brisk at Birmingham. There is a marked tendency to see $11 furnace, although the advance to $10.50, Birmingham, went into full effect only recently. Sales in all districts during the past week totaled about 200,000 tons most of the business closed being for first quarter of next year's shipments. The demand for basic has taken up practically the increase in production, so that idle furnace capacity is being steadily reduced, furnaces are looking forward to still greater advances in pig iron prices. In the past week pig iron has advanced sharply and to all appearances this is only the beginning of what may be the most sensational advance the pig iron market has experienced since 1899. Quotations are as follows:

No. 2X	Northern Foundry, New York	$15.00 to	$15.50
No. 2X	Northern Foundry, Buffalo	13.00 to	13.25
No. 2	Southern Foundry, Birmingham	10.00 to	10.50
No. 2	Southern Foundry, Cincinnati	13.00 to	13.25
No. 2	Southern Ohio Coke, Cincinnati	14.00 to	14.50
No. 2	Northern Foundry, Chicago	13.75 to	14.00

Copper.

A number of first hands offered electrolytic as low as 18 cents at the close of last week. Assertions were freely made by producers that the metal was due for an upward turn in both price and demand. A large number of inquiries were received from manufacturers who had just secured munition contracts and this business totaled more than 50,000,000 pounds. Production has been continued on a record-breaking scale. It is believed in the trade that production has reached the maximum for the time being, so far as the older mines are concerned.

Tin.

The tin market was erratic with a tendency toward lower levels. Indications are, however, that consumers are not fully covered for September and October requirements as had been previously thought. Spot tin declined to 34½ cents. The statistical position of tin is regarded as being favorable to the metal. The world's visible supply increased 157 tons during July. Stocks afloat were larger at the end of July than at the end of June, there being 4,370 tons afloat to London and 7,700 tons afloat to the United States, thus making the total afloat at the end of July 12,070 tons, as compared with 11,166 tons afloat at the end of June.

Lead.

The conduct of the fight between the outside interests and the large producers resulted in lead passing through a sensation week with prices being reduced. Spot went as low as 4¾ cents and closed at 5 cents, New York, and 4⅞ cents, East St. Louis.

Spelter.

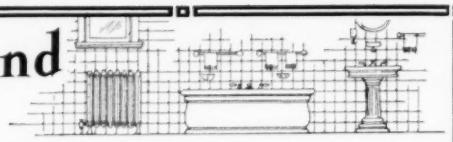
The course of the market in zinc during the last week continued downward. Buyers are apparently keeping out of the market. No large buying for foreign account developed and efforts to interest domestic consumers were without result. Spot closed at 16 cents, New York and 15¾ cents, East St. Louis.

Old Metals.

New York dealers' buying prices are all nominal as follows:

Strictly crucible copper	$15.00 to	$15.25
Light copper	12.50	12.75
Uncrucible heavy copper	14.50	15.00
Uncrucible copper wire	14.50	15.00
No. 1 brass turnings	11.00	12.00
No. 1 brass clippings	12.50	13.00
Cocks and faucets	10.00	10.50
Light brass	7.50	8.00
Solder joints	7.25	7.50
Heavy lead	3.87½	4.00
Tea lead, nominal	3.62½	3.75

Among the Plumbing and Heating Contractors



Illinois

Chicago and Vicinity.

C. J. Stein, of 853 South State Street, has been awarded the plumbing contract for the $1,000,000 Y. M. C. A. Hotel, to be built at 818-26 South Wabash Avenue. The steam heating contract went to Mehring & Hanson, of 307 West Washington Street. Work on the foundation of the building will begin within the next two weeks.

Adam Harvey, of 2349 West North Avenue, will install the plumbing system in an addition to the Danish Orphans' Home at 3322 Evergreen Avenue.

The plumbing contract for a $12,000 store and flat building, to be erected at Marshfield Avenue near 46th Street, has recently been awarded to John Kleker, of 1707 West 47th Street.

E. J. Claffy Co., of 12 West Illinois Street, has been awarded the contract for installing the hot water system in a two-story (attic and basement) residence to be built at Sheridan Place, near Sheridan Road.

The Cook & Chick Co., of Oak Park, Ill., will install the steam heating system in a two-story Masonic temple to cost $35,000, which is to be erected at Euclid Avenue and Harrison Street, Oak Park.

Richard B. Finn., who conducts a plumbing and heating establishment at 3516 Vincennes Avenue, Chicago, narrowly escaped serious injuries when an automobile in which he was riding, turned turtle, on Monday, August 9th. Mr. Finn sustained injuries to his right leg. Six other persons, all of whom were more or less injured, were in the car at the time of the accident.

In addition to looking after violations of the criminal code, members of the police force of Chicago have been drafted to give a certain amount of their time to the health department, owing to their knowledge of the physical conditions in the districts they serve. Recently the blue-coats were going about distributing placards in stores and other public places, the said placards containing instruction on the sanitary care of babies during the hot weather, particular attention being laid on the importance of bathing and pure water. It seems that it has remained for the health department to find useful work for the policeman when time lies heavy on his hands. Men in the local trade have remarked that the police could be useful to the health department in reporting such violations of the sanitary code as come under their notice, without adding heavily to or interfering with their other duties.

Steps to abolish the sewage disposal commission of the sanitary district were taken recently. An ordinance repealing one passed Nov. 2, 1910, was passed by the city council. The commission had been appointed to investigate and report on the development of water power, the disposal of all electrical energy created, and the best methods of the treatment of sewage by other methods than dilution. It was considered a useless expenditure to continue this commission, as it secured nothing new, and all of the information in its possession had been procured from government reports.

Massachusetts

Boston and Vicinity.

David Craig, of Boston, former president of the National Association of Master Plumbers, has been named by Governor Walsh as secretary of the Massachusetts State board of examiners of plumbers succeeding John C. Kelley, who had held the position since the board was created six years ago. Mr. Kelley resigned because he felt that the duties of the office required more time than he could spare from his business. Mr. Craig has opened offices at 68 Broad Street, adjoining his place of business at 70 Broad Street. This is conveniently located near the business section of the city. Mr. Craig has been in the plumbing business in Boston since 1893. He has always been prominently identified with local, state and national master plumbers' organizations.

The Secretary of State at Boston has recently issued a charter to the Springfield Plumbing & Heating Co., of Springfield, a $30,000 corporation. The incorporators are Max Radding and Abraham H. Slavin.

Maurice E. Chase, conducting a steamfitting business at 132 High Street, Boston, has made an assignment to Clarence A. Warren.

Mayor Haines, of Medford, has awarded a contract for heating and ventilating a new eight-room brick school building, to be erected in that city, to W. W. Campbell & Son, of Malden, whose bid of $6,117 was the lowest of eight. The contract for the plumbing went to W. P. Kane, of Medford, for $1,840.

Maine

Myers & Mahoney, of Portland, have the plumbing contract for a new apartment house being erected on the J. B. Brown estate in that city, and they also secured the contract for plumbing the addition to St. Joseph's Convent.

The Congress Square Hotel, one of the principal hostelries of Portland, is being enlarged, and contracts for work in connection with the addition have recently been let. The plumbing contract, which calls for the installation of 68 bath rooms and other work, is being done by Harry Fuller. Kezer & Stoddard have the contract for the heating work.

Bids are soon to be asked for additions and alterations to the heating plant of the customs house at Portland. The Portland postoffice building also is to have a new system of heating installed, and bids are already in the hands of the treasury department at Washington.

Roy P. Marr, recently employed as a salesman, has joined his father in the management of the hardware and plumbing specialty business conducted by the latter at Boothbay. The new concern will be known as the W. T. Marr Co.

The contract for plumbing in the dormitory and kitchen buildings at the Washington County state normal school will be awarded in the near future.

Missouri

The Women's Auxiliary to the Master Plumbers' Association of Kansas City, Mo., held its regular monthly meeting at the home of Mrs. Lee Smith, 1117 Myrtle Avenue, in that city on Thursday, August 12th, when final arrangements were made for its river excursion. The organization has chartered the Steamer "Chester" for Friday evening, August 20th, and the trip will cover about five miles down the Missouri River. Good music and dancing will be the main features of the affair. The boat leaves the foot of Main Street at eight o'clock in the evening. The committee of arrangements is composed of Mrs. Lee Smith, chairman, and Mrs. Fred Hacker, president of the auxiliary.

Among the jobbers of plumbing and heating supplies in the "Show-Me" state the Harry Cooper Supply Co., of Springfield, Mo., is one of the aggressive and progressive concerns doing business throughout a large radius of

A Corner of the Showroom of the Harry Cooper Supply Co., at Springfield, Mo.

western territory. The company's office and show-room at Springfield is one of the attractive business institutions of that city. We present herewith a picture of the concern's neat and well arranged display room, which was installed some time ago.

Washington

The school board, of Colton, has awarded the contract for both plumbing and heating in the new High School to be built in that city to Charles Hahn, of Lewiston, Idaho, on his bid of $2,200. Other bidders for the work were: Arnold-Evans Co., Spokane, $2,600; Blair-Meagher Co., Spokane, $2,645; F. A. Peterson, Lewiston, Idaho, $2,652; Whitter-Fisher Co., Moscow, Idaho, $2,570.

The Appling-Griggs Co., of Tacoma, has been awarded the contract for the installation of oil burning equipment at the Marine Hospital at Port Townsend, headquarters for the Puget Sound District of Coast Artillery. The work will cost about $2,000.

Plans for a six-story brick and mill construction hotel building, to be built in Walla Walla, are being prepared by George B. Purvis, Northern Bank & Trust Building, Seattle, and same will be ready for figures from both general and subcontractors at an early date. The structure will cost $150,000. According to reports the heating system planned will be excelled by none in the state of Washington. The structure will be owned by the New Grand Hotel Co., of Walla Walla.

Wilcox & Everett, architects, Boston Block, Seattle, have let the contract for heating in an apartment and hotel building to be built adjoining each other on Fourth and Marion Streets, Seattle, to S. Normile, 314 James Street, on his bid of $4,600.

M. J. Hursen, Globe Block, Seattle, has awarded the contract for plumbing in the eleven-story steel and reinforced $500,000 business building under construction at Third Avenue and Stewart Street, to F. W. Beck & Co., Lowman Building. The heating contract has not been let to date.

Bebb & Gould, architects, Denny Building, will receive bids until September 15th for the general and subcontracts, including plumbing, heating, ventilating, etc., for the new Times Building, to be built on Times Square, Westlake and Third Avenues and Stewart Street, at a cost of $500,000. The structure will be five stories, class A, fireproof construction, and will be owned by Times Publishing Co.

Idaho

Ed Johns, of Pocatello, Idaho, has moved his plumbing establishment from the rear of the Bannock National Bank to the new Reuss Building on North Main Street.

The school board of Moscow, Idaho, has awarded the contract for a new heating system for the Whitworth School building to the Witter-Fisher Co., of that city. This company also has the contract for plumbing and ventilating. These contracts amount to $3,500.

The Cope Plumbing & Heating Co., of Coeur D'Alene, Idaho, will install both the heating and plumbing in the new $20,000 court house, to be built at Newport, Wash. Practically every large shop in Spokane, Walla Walla and North Yakima submitted bids for this job.

Oregon

Portland and Vicinity.

Owing to the number of many pretentious residences under construction in various sections of the city of Portland and other structures of similar nature under contemplation, which have been announced, that character of construction has drawn the major portion of attention among builders, architects and master plumbers during the past few weeks. Of course, all the new construction going on in the Rose City is not confined to residences by any means, but owing to the fact that so many structures in this class are being erected special allusion must be made to them.

Tourtelotte & Hummel, architects, Rothchild Building, have completed plans for the installation of a heating system in the Nurses Home for the Emanuel Hospital Association, to be built on the corner of Graham and Commercial Streets, and bids for both plumbing and heating will be received at an early date by them. The proposed structure will be two stories, 42x100 ft., of hollow tile construction. The general contract for construction is held by J. A. Backstrand, of Portland.

The city council has awarded the contract for the installation of plumbing in the Beacon Park public buildings to E. A. Bohren, of 129 Union Avenue. Other Portland firms which submitted bids were: E. G. Ruedy,

Sturges & Sturges, Williams & Biggs, R. D. Rennie, Edwards & Merrigan and T. J. Crowe.

J. F. Bennes, architect, Chamber of Commerce Building, has issued a call for bids for the construction of the State Normal School building, to be built at Monmouth. The proposed structure will be 84x128 ft., two stories high and full basement, mill construction on concrete foundation, costing about $50,000. The basement will contain apparatus for hot air heating and ventilating systems. Bids for plumbing, heating, ventilating and other subcontracts are being received at this time. The date of opening bids has not been set, although from all reports the contract will not be let until about August 20th.

The W. G. McPherson Co., of 328-330 Glisan Street, has been awarded the contract for the installation of a heating system in the addition being built to the Oregon City school. The structure will cost about $20,000, and the heating contract will amount to about $2,000.

Charles W. Ertz, architect, Pittock Block, has awarded the contract for the installation of plumbing in a remodeled business block on Twenty-first Street, between Flanders and Glisan Streets, to A. Ertz, Lumber Exchange Building. The contract for heating was given to Jacobsen-DeTemple Co., of 308 Davis Street.

The County Court of Baker recently opened bids for the installation of a heating plant in the courthouse, as follows: O'Rourke Bros., Walla Walla, Wash., $2,198; Finnegan Bros., Portland, $2,268; Fish & Bowen, Baker, $2,200; Appling-Griggs Co., Tacoma, Wash., $2,812. While the contract has not been awarded to date, it is thought same will go to the low bidders, O'Rourke Bros., of Walla Walla.

California

San Francisco and Vicinity.

While building operations, taking the Pacific Coast as a whole, do not show any perceptible increase during the last month, San Francisco and the smaller cities of central California show a tendency to recover somewhat from the stagnation that has prevailed heretofore. In this city the total valuation of the building permits issued during July reached a little over a million and a half dollars, the largest showing in several months and with only two exceptions, the largest during the past twelve months. The record for the month just ended was, however, a half million dollars behind that of July, 1914, when the erection of the Exposition buildings was an important feature. In Oakland and Sacramento the figures for July indicate a revival, as compared with the months immediately preceding.

With the opening of next week a number of new laws passed by the last legislature and more or less affecting the plumbing trade become effective. These include a number of laws pertaining to labor. One requires that where five or more men are employed proper ventilation and sanitation and pure drinking water must be supplied. This is intended to apply to outdoor as well as inside employment. Another labor law provides that discharged employees must be paid wages due within five days of discharge. Another law provides for the proper ventilation and sanitation of hotels, lodging houses, etc., and still another creates a State Department of Sanitary Engineering.

San Francisco plumbing and heating contractors are now figuring on the plumbing, heating and ventilating for the new Benjamin Ide Wheeler Hall at the University of California, at Berkeley, Cal. This will be one of the largest jobs let in several months.

The San Francisco Board of Supervisors have passed an ordinance ordering the installation of boilers in the Relief Home tract in this city.

Other Cities in the State.

Contracts were let this week for the reconstruction of the sanitary system at the High School in Chico. A Bischoff was awarded contracts as follows: For plumbing, $2,300.50; two manholes at $175 each, and repairs on gutters and installation of new intake, $200. C. B. Johnson was awarded the contract for the erection of a building for the housing of the new toilets, at $1,974.

The promoters of the new Olympic Baths in Stockton have applied for permission to connect the bath house by a 12-inch pipe line with a gas well located on East Street, near Channel.

S. A. Wheeler, of Corning, was the successful bidder for the proposed waterworks extension, and E. C. Hamlin, of San Jose, for the extension of the sewer system. The former contract amounted to $4,745, and the latter to $15,381. There were ten bidders for the waterworks extension and ten for the sewer.

William Cazaux, of Arcadia, has been awarded a contract for the furnishing of 19,000 feet of four-inch wrought iron pipe and for the installation of the pipe.

Max Sutton is preparing to open a plumbing establishment in Colusa.

The plumbing firm of Phelps & Ferguson, at Newcastle, has been dissolved. Mr. Phelps has taken over and will continue the business in his own name.

I. W. Vanderbilt has bought out the interest of his partner in the plumbing firm of Vanderbilt & Williams, at Auburn, and will continue the business under his own name.

C. H. Bates, formerly of Richmond, Cal., has gone into partnership with Bert Heath, a well known plumber of Martinez, under the firm name of Heath & Bates. A suitable location has been secured at the corner of Green and Ferry Streets, Martinez.

Contracts are expected to be let any day on the new factory building of the Shredded Wheat Biscuit Co., in Oakland. The building is expected to cost between $150,000 and $175,000.

The City Trustees of San Jacinto have decided to have erected a new stand pipe for the water system. The stand pipe will be 55 feet high and 18½ feet in diameter and will hold 110,000 gallons of water. The cost is estimated at $2,000.

Sealed bids are being received by the Board of Trustees at Inglewood for the Inglewood Union High School plumbing system, sprinkler system, cesspool and pump; and for a pipe line to connect the proposed swimming pool with the county well.

Four bids have been received by the city trustees of San Diego for the construction of a septic tank for the La Jolla sewer system, as follows: Isbell Construction Co., $4,500; Doran & Reed, $4,400; Brown & DeCue, $4,049, and G. R. Daley, $4,375. The contract will be let in a few days.

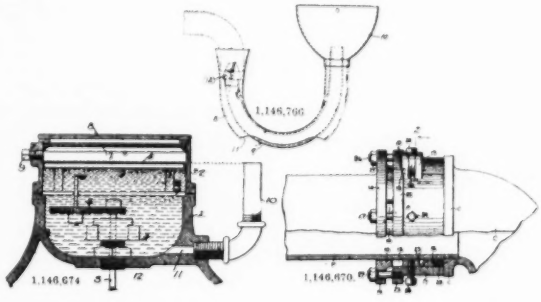
Sioux City, Iowa.—Major R. Allen, of 1013 West Seventh Street, has recently secured contracts for installing plumbing and heating in residences for the following parties: B. Hurd, 1704 West Sixteenth Street; E. H. Price, 1200 West Second Street; E. T. Thompson, 1623 Isabella Avenue; George W. Mower, 2001 Rebecca Avenue; Ben Murray, 707-709 West Eighth Street; A. Sunde, 2210 Peach Street, and Russell Johnson, 1614 West Sixth Street.

Patents

Plumbing Department.

1,146,766. Faucet Drinking Fountain. Almont A. Bailey, Jr., Portland, Ore., assignor of one-half to N. D. Stearns, Portland, Ore. A portable drinking fountain comprising a crooked body composed of two tubular members one within the other; said members being adapted at one end to fit one around and one into a faucet end, and at their opposite ends provided with a bowl-like member into which said inner tubular member projects, said outer tubular member being provided with an outlet opening through its side for overflow.

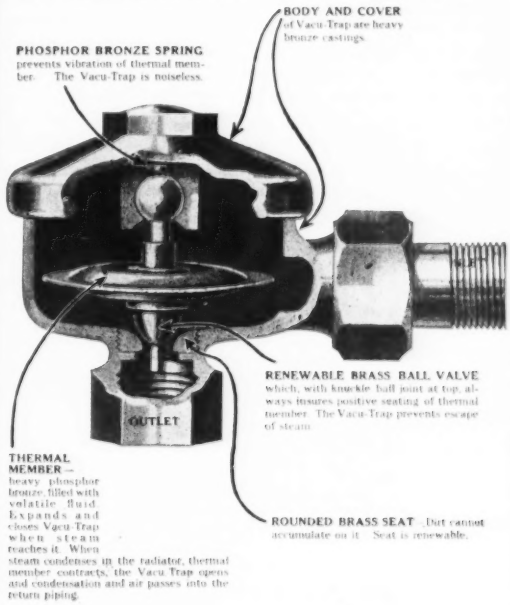
1,146,674. Water Meter. Lincoln Van Gilder, Ventnor, N. J. The combination in a meter of a main casing; a liquid tight casing mounted on the main casing, having a normally closed filling opening and a transparent face plate; an overflow conduit opening into the bottom of said second casing, and extending upwardly for a distance sufficient to bring its outlet substantially to the level of the top of said casing; a driving member extending from the main casing into said second casing; registering mechanism connected to said driving member in said casing; and a body of transparent lubricant trapped in the second casing by said overflow pipe.



1,146,670. Means to Stop Leaks in Pipes, Etc. George Tippett, New York, N. Y. In a device of the character set forth, the combination of a sleeve split longitudinally into a plurality of segments, each segment having a slot formed therethrough and extending longitudinally of the axis of the sleeve, a collar surrounding the sleeve and having a plurality of lugs extending radially inwardly through said slots, said lugs being spaced from the ends of the slots and one end of the collar projecting over and beyond the adjacent end of the sleeve, and means acting between the sleeve and the collar serving to force the sleeve longitudinally of the collar and causing said sleeve end to approach the plane of said end of the collar.

1,146,946. Drinking-Fountain. Kelso Murdock, Cincinnati, Ohio. A drinking fountain comprising a pedestal, a water discharge device adjustably mounted at the upper end of the pedestal, a supply nozzle, a valve housing surrounding the supply nozzle, a valve in the housing, and a supply pipe extending from and secured to the discharge device and projecting into the valve housing, the discharge device being adapted to regulate the extent to which the supply pipe projects into the valve housing when the discharge device is adjusted on the pedestal.

RELIABLE
Vacuum Heating Equipment


BODY AND COVER of Vacu-Trap are heavy bronze castings.
PHOSPHOR BRONZE SPRING prevents vibration of thermal member. The Vacu-Trap is noiseless.
RENEWABLE BRASS BALL VALVE which, with knuckle ball joint at top, always insures positive seating of thermal member. The Vacu-Trap prevents escape of steam.
OUTLET
THERMAL MEMBER — heavy phosphor bronze, filled with volatile fluid. Expands and closes Vacu-Trap when steam reaches it. When steam condenses in the radiator, thermal member contracts, the Vacu-Trap opens and condensation and air passes into the return piping.
ROUNDED BRASS SEAT — Dirt cannot accumulate on it. Seat is renewable.

Simple, Isn't It?

Yes, and it's just as efficient and durable as it is simple in construction. These thermostatic "Vacu-Traps" automatically keep the heating system free from air, and drain the radiators on which they are used of all condensation, without loss or escape of steam.

VACU-TRAP

These valves insure thorough draining and quick air liberation at all times. They are noiseless, and the most positive-acting return line valves.

The superior design and extra heavy construction of the Vacu-Traps insure durability under expansion and contraction without danger of breakage. Each Vacu-Trap is properly and permanently adjusted at our factory, so no adjustments are necessary when installing, or later.

RELIABLE Heating Equipment for Air Line, Return Line and Vacu-Vapor Systems is standardized and carried in stock by most representative jobbers.

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fits any closet seat—clamps on securely—can't come loose or fall off; a household necessity—a ready seller;—that means

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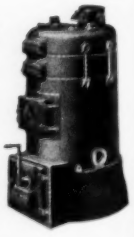
For Steam or Hot Water



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Honest, conservative ratings, high quality, simplicity and economy, make friends for them everywhere.

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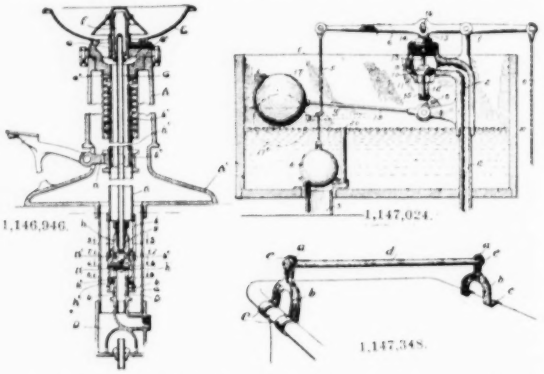
Minneapolis, Minn.—Assoc. Mfrs. Sup. Co.
Philadelphia, Pa.—J. D. Johnson Co.
Newark, O.—The Evans Supply Co.
Lincoln, Neb.—Lincoln Htg. & Vent. Supply Co.
Cleveland, O.—H. S. Rivitz & Co.

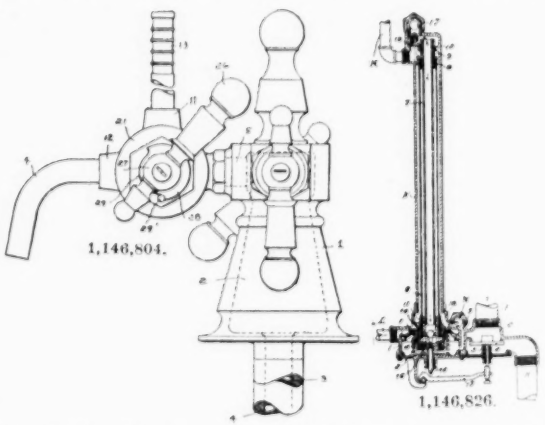
R. J. Schwab & Sons Co.
Milwaukee, Wis.

1,147,024. Flush-Valve for Water-Closets. Albert C. Jackson, Dayton, Ohio. In an apparatus of the character described, a reservoir, a supply valve, means for locking the valve in open position, and a float actuated by the rise of the contents within the reservoir for releasing the valve when the contents have reached a predetermined level.



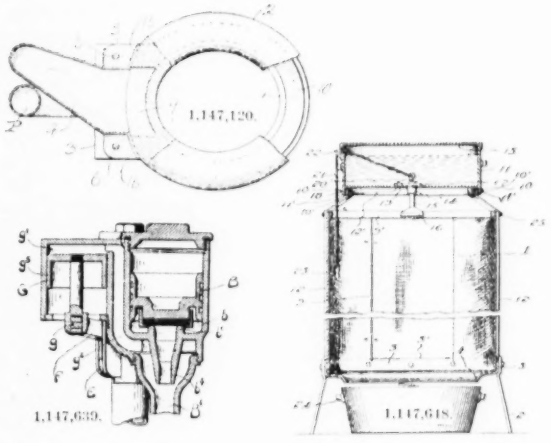
1,147,348. Hand-Rail for Bath-tubs. Charles W. Wadsworth, Brooklyn, N. Y. The combination, with a bath tub, of a pair of metal standards located on the roll on the opposite sides of the tub, having their footings fitted to the roll and engaged under its free edge, their bodies extended vertically above the roll; a bar having its ends securely attached by proper fittings to the heads of the standards, the bar shorter than the free space between the heads of the standards, with which the connection is effected by drawing in the heads on a smart tension, all substantially as set forth.

1,146,804. Attachable Two-Way Outlet for Hot and Cold Water Faucets. Irving W. Little, Toledo, Ohio. A two-way outlet for plumbing fixtures comprising a mixing chamber provided with an outlet-port and valved supply pipes respectively for hot and cold water, a valve housing having an inlet-port nipple for coupling the housing to the outlet port from said mixing chamber, said valve housing being also provided with an outlet-port disposed in a horizontal plane and with an outlet port disposed in a vertical plane, a hollow valve body within said housing provided with two diametrically opposite ports, said valve body ports differing in length and being separated



on opposite sides by equal valve body portions, said valve body being rotatable in said housing to close the inlet port or to bring the inlet port into communication with either of said outlet ports of the valve-housing and to close the other outlet port.

1,146,826. Water-Heater Construction. Frank L. O. Wadsworth, Sewickley, Pa. In an automatic water heater, a burner, a gas valve for controlling the supply of gas to the burner, water actuated means and thermostatic means for controlling the gas valve, with one of the said means carried bodily by the other means, the water actuated means being arranged to open the gas valve when the outlet of the heater is opened and the temperature of the water below a predetermined point, and the thermostatic means being arranged to close the gas valve without moving the water actuated means with respect to the means which carries it when such valve is open and the temperature of the water rises above a predetermined point.



1,147,120. Ventilating Device for Water-Closets. George Clark Richards, Berkeley, Cal. As a new article of manufacture, a ventilating attachment for a closet bowl comprising a tubular body adapted to rest upon the kidney of the bowl and to be placed in communication with the interior of the bowl, said attachment being provided at its inner end with laterally directed substantial horizontal and vertical flanges, the horizontal flanges being disposed at the base of the body for contact with the kidney of the bowl and the vertical flanges being adapted to contact with the adjacent portions of a seat, the opposite end of the attachment being restricted and adapted for communication with a flue.

1,147,639. Supply-Valve. Edward Harry Nolan, Cincinnati, Ohio. In combination with a flush tank, a supply valve having an inlet port, communicating with a pressure supply pipe, and a discharge port, a pressure actuated valve disk for controlling the delivery from the inlet port through the discharge port, a pressure chamber inclosing said valve disk and having a pressure delivery port, an auxiliary valve for controlling the pressure in said chamber, manually operable means for opening said auxiliary valve to exhaust the pressure from the chamber to raise the valve disk, and means actuated by suction created by the delivery of water through the discharge port for closing the auxiliary valve to confine the pressure in the chamber to close the valve disk.

1,147,648. Portable Shower-Bath. Robert Alex Rutland, Alapaha, Ga. A device of the class described comprising a body, a tub beneath said body, a tank above said body, said tank being of smaller diameter than said body, said body including vertical strips, said vertical strips having their inner ends bent inwardly and extended upwardly to support said tank, said vertical strips having their lower ends turned outwardly on an incline to provide legs for supporting said body, a shower nozzle depending

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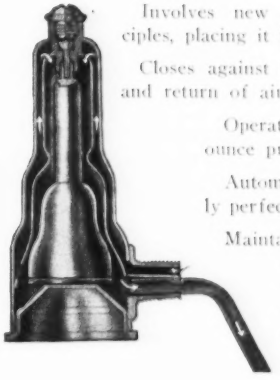

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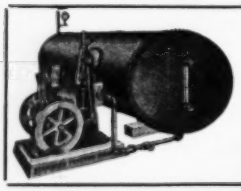

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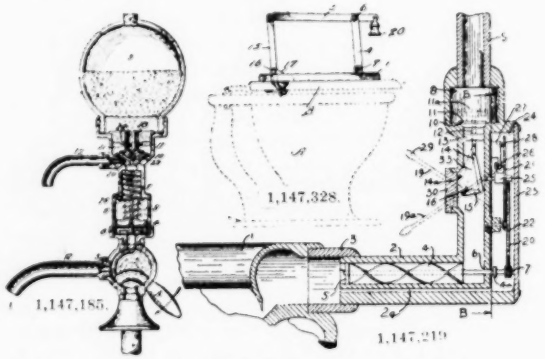
from said tank, said tank having a discharge opening above said shower nozzle, a valve normally positioned over said discharge opening, means extending into said body for opening said valve to permit the contents of said tank to reach said shower nozzle, means for guiding the last mentioned means, and a flange secured in said body and having its lower edge offset inwardly from its upper edge to direct liquid from the sides of the body to said tub.

1,147,328. Auxiliary Infant's Seat. Frank H. Knight, Lancaster, Pa., assignor of one-half to W. B. Rush, Lancaster, Pa. An auxiliary seat for infants provided with a folding rest, and a folding clamp adapted to engage the permanent seat of a water-closet and comprising an upwardly bent slotted strap pivotally connected to said auxiliary seat and a screw-threaded rod protruding through the slot in said strap and pivotally connected to said rest, and a nut on said rod bearing against said strap, the screw-threaded part of said rod being bent forward.

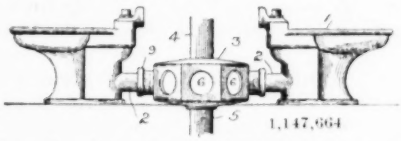
1,147,185. Automatic Liquid-Soap Dispenser. Walter Leonard Phillips, Oakland, Cal. In combination with a faucet and a source of dispensable material, a receiver communicating with the faucet and source to receive a charge from the latter, said receiver having an exterior outlet independent of the faucet outlet, means to control said receiver outlet and to also control the communication between the receiver and source, and means in the receiver operable by the water pressure in the faucet for acting upon the charge in the receiver to thereby cause the charge to actuate said controlling means to close the communication between the receiver and source, and to open the outlet to allow the material to be ejected through the outlet.



1,147,219. Self-Closing Flush Valve. Frank De Vaux, San Jose, Cal., assignor of one-half to Ralph Farnsworth, San Jose, Cal. A device of the character described, comprising a casing having a receiving arm and a discharge arm, a propeller revolubly mounted in said discharge arm, a valve operatively positioned in said receiving arm, manually operative means for opening said valve, and mechanism driven by said propeller for closing said valve at a predetermined period, said means and mechanism comprising a gear operatively connected to said propeller, a weighted arm pivotally mounted on the hub of said gear, a pin secured in the rim of said gear so positioned as to engage said weighted arm, a rod revolubly mounted in said casing and having an arm attached thereto, a link pivotally attached to said arm and said valve, a lever arm secured to one end of said rod and so positioned that one end thereof will engage said weighted arm at a predetermined period, said means acting to hold said valve in the open position until said mechanism closes the same.

1,147,664. Closet Installation and Fixture. William M.

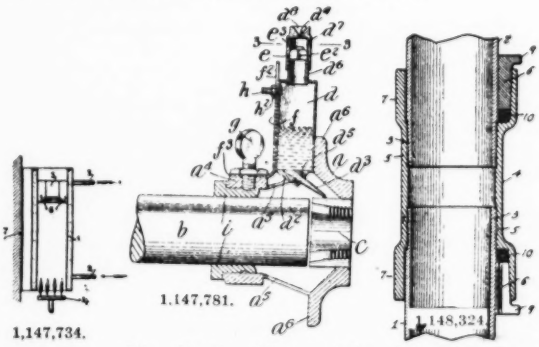
Ward, Dayton, Ohio. A series of separate closet members, a horizontally disposed spud forming a part of each closet member, the said spuds being arranged in radial positions about a common point, a receiving chamber located above the line of the floor upon which the closet members rest, radially disposed sleeves projecting from



the receiving chamber into which the closet spuds project, and a slip joint between the receiving chamber sleeves and the closet spuds, the construction and arrangement being such that the closets may be separately adjusted radially independent of each other and independent of the receiving chamber.

Heating Department.

1,147,734. Liquid Heating Apparatus. Hugo Junkers, Aix-la-Chapelle, Germany. A household heater, comprising the combination of a burner, a combustion chamber extending upward therefrom formed by a vertically disposed wall which is endless in a horizontal direction, a water chamber completely surrounding the combustion chamber, and pipes for leading water to and from the water chamber, said heater being of substantially greater width than depth, the rear wall thereof being concave and the corners of the heater at the lateral edges of the rear and front walls thereof being rounded.



1,147,781. Die Stock Oiler. John W. Brennessel, Brooklyn, N. Y. The herein described oiling device for die stocks comprising a tank provided at the bottom thereof with a discharge nozzle, and at the top thereof with a tubular neck having a detachable tubular cap provided in the top portion thereof with an air port, and a vertically movable valve placed in said cap and adapted to close said port.

1,148,324. Piping Coupling. John Kenny, Brooklyn, N. Y., assignor of one-half to John Simmons Company, a corporation of New York. The combination with two pipe sections having their proximate ends threaded, of a coupling sleeve independent of the pipes having an interiorly threaded portion into which the ends of the two pipe sections are screwed, a plurality of key seats extending throughout their length parallel with the run of the pipes formed in the coupling member beyond the threaded portion at each end, and plurality of independent wedge-shaped keys positioned in the seats against lateral displacement by driving them in the seats parallel with the run of the pipe, said keys being in bearing engagement with the walls of the pipe sections beyond the threaded portion and acting by themselves to relieve the strain on the threaded portion of the pipe sections.

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TREASURY DEPARTMENT, SUPERvising Architect's Office, Washington, D. C., August 2, 1915.—Sealed proposals will be opened in this office at 3 p. m. September 27, 1915, for the construction complete (including mechanical equipment and approaches) of a two-story and basement stone faced building of 28,700 square feet ground area, fireproof construction, composition, tin and copper roof, for the United States post office and court house at Tulsa, Oklahoma. Drawings and specifications may be obtained after August 15th, 1915, from the Custodian of the site, Tulsa, Oklahoma, or at this office, in the discretion of the Acting Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect. 8-7;14

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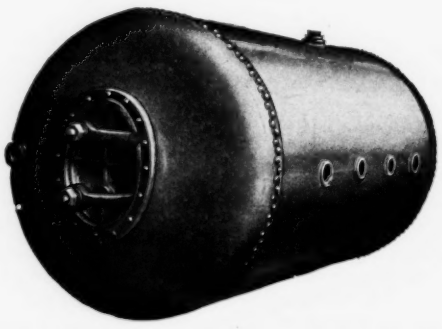

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